Decoding human behaviour

An introduction to behavioural science methods and techniques

TRAChangeways

"The *remembered self* is not a faithful reporter of the —— *experienced self*."

Daniel Kahneman

The human mind is not well-designed to provide an accurate report of behaviour.

Despite our best intentions, our minds are affected by biases that mean we are not accurate in sharing back our behaviours.

- Our memories are not always reliable and we can have poor recall especially when we're tired or under time pressure.[1]
- We tend to be overconfident and overly optimistic, especially in relation to our own behaviour or those in our in-group.[2]
- We want to provide socially desirable answers.[3]
- We tend to remember the emotional peaks and the end of an experience.[4]

Out of the petri dish and into the real world

Findings from experimental settings, surveys and focus groups are not always representative of real-world behaviours.

Outcomes can be affected by:

- Leading questions and survey bias.[5]
- Researcher and research effects (such as the Hawthorne effect or group think).[6]
- The environment in which research takes place, including the physical room or the digital context.[7]
- The use of key words and visual prompts.[8]

Behavioural science methods and techniques can provide accurate ways of capturing actual behaviour.

Consider using these approaches instead of, or alongside, more traditional quantitative or qualitative research methods.

1   Catalogue of Bias Collaboration, Spencer EA, Brassey J, Mahtani K. Recall bias. In: Catalogue Of Bias 2017.
2   The optimism bias, T. Sharot, Current Biology, 21 (23) 2011, pp. R941-R945
3   The relationship between social desirability bias and self-reports of health, substance use, and social network factors among urban substance users in Baltimore, Maryland., Latkin CA, Edwards C, Davey-Rothwell MA, Tobin KE. Addict Behav. 2017 Oct;73:133-136.
4   When More Pain Is Preferred to Less: Adding a Better End, Kahneman, Daniel; Fredrickson, Barbara L.; Schreiber, Charles A.; Redelmeier, Donald A. (1993). Psychological Science. 4 (6): 401–

5   A catalog of biases in questionnaires, Choi BC, Pak AW. Prev Chronic Dis. 2005 Jan;2(1):A13. Epub 2004 Dec 15. PMID: 15670466;
6   Sackett Catalogue of Bias Collaboration, Spencer EA, Mahtani K, Hawthorne effect. In: Catalogue Of Bias 2017
7   The influence of ceiling height: The effect of priming on the type of processing that people use, Meyers-Levy, Joan, and Rui Zhu. Journal of consumer research 34.2 (2007): 174-186.
8   Using Priming Techniques to Facilitate Health Behaviours, Wryobeck, J. and Chen, Y. (2003), Clinical Psychologist, 7: 105-10

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Capture and understand real-world behaviour

Before we delve into the specific methodologies, here are the guiding principles to consider:

1

Capture real behaviour first

Capture what people cannot explicitly tell you by looking beyond reported behaviour and look to capture *actual* behaviour.

2

Test and trial in the real world

Look to capture behaviour in the context in which it occurs.

3

Evidence based

Create measurable behaviour change objectives based on empirical data and cross-validate your findings with multiple data points where possible.

4

The bigger picture of behaviour change

Make sure the overall system supports the behaviour, as we cannot view nudges in isolation.

5

Behaviour is not locked in

Consider opportunities for reinforcement and continuous evaluation.

6

Ethical duty

Adhere and respect people's autonomy, dignity and rights, and evaluate unintended consequences.
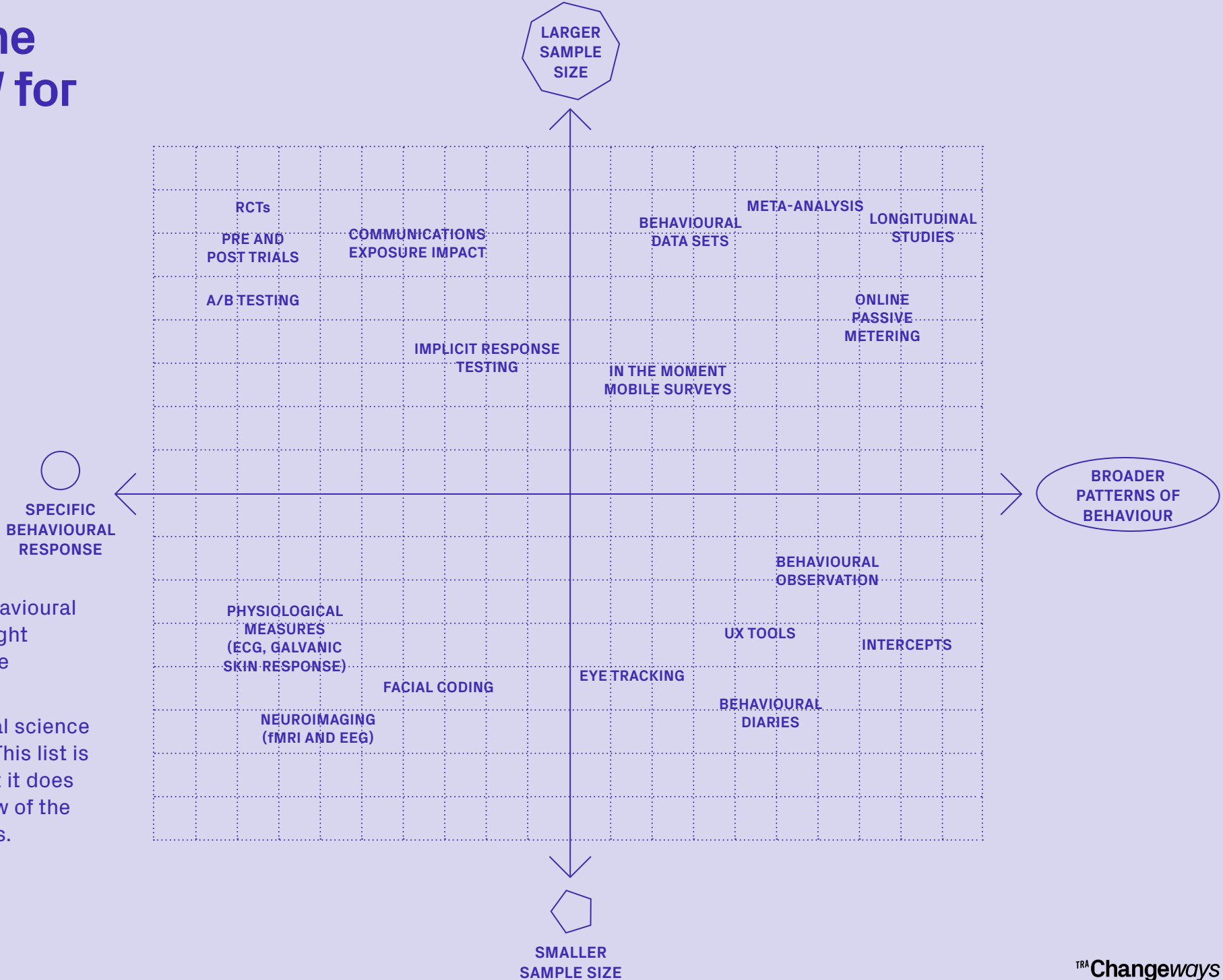
7

Differences in audiences

Aim to understand individuals as whole people with different backgrounds, demographics, cultures, ethnicities and affiliated groups.

8

Check our own biases

Be open to the many factors that can influence behaviour and be wary of our biases and preconceived ideas.

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Select the *right tool* for the job

We can unlock behavioural insights with the right behavioural science methodology.

Applied behavioural science is a growing field. This list is not exhaustive, but it does provide an overview of the current approaches.

LARGER SAMPLE SIZE

SPECIFIC BEHAVIOURAL RESPONSE ← → **BROADER PATTERNS OF BEHAVIOUR**

SMALLER SAMPLE SIZE

RCTs

PRE AND POST TRIALS

A/B TESTING

COMMUNICATIONS EXPOSURE IMPACT

IMPLICIT RESPONSE TESTING

META-ANALYSIS

BEHAVIOURAL DATA SETS

LONGITUDINAL STUDIES

ONLINE PASSIVE METERING

IN THE MOMENT MOBILE SURVEYS

BEHAVIOURAL OBSERVATION

PHYSIOLOGICAL MEASURES (ECG, GALVANIC SKIN RESPONSE)

FACIAL CODING

EYE TRACKING

UX TOOLS

INTERCEPTS

BEHAVIOURAL DIARIES

NEUROIMAGING (fMRI AND EEG)

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Think about whether the behaviour in question is broad or specific

A cyber security example:

BROADER PATTERNS OF BEHAVIOUR

Understanding different groups of people's current cyber security behaviours and their motivations to stay secure online.

SPECIFIC BEHAVIOURAL RESPONSE

Understanding people's responses to incentives that prompt them to use a long and strong online password.

Think about the sample size

Does the research approach allow for a small or large sample?
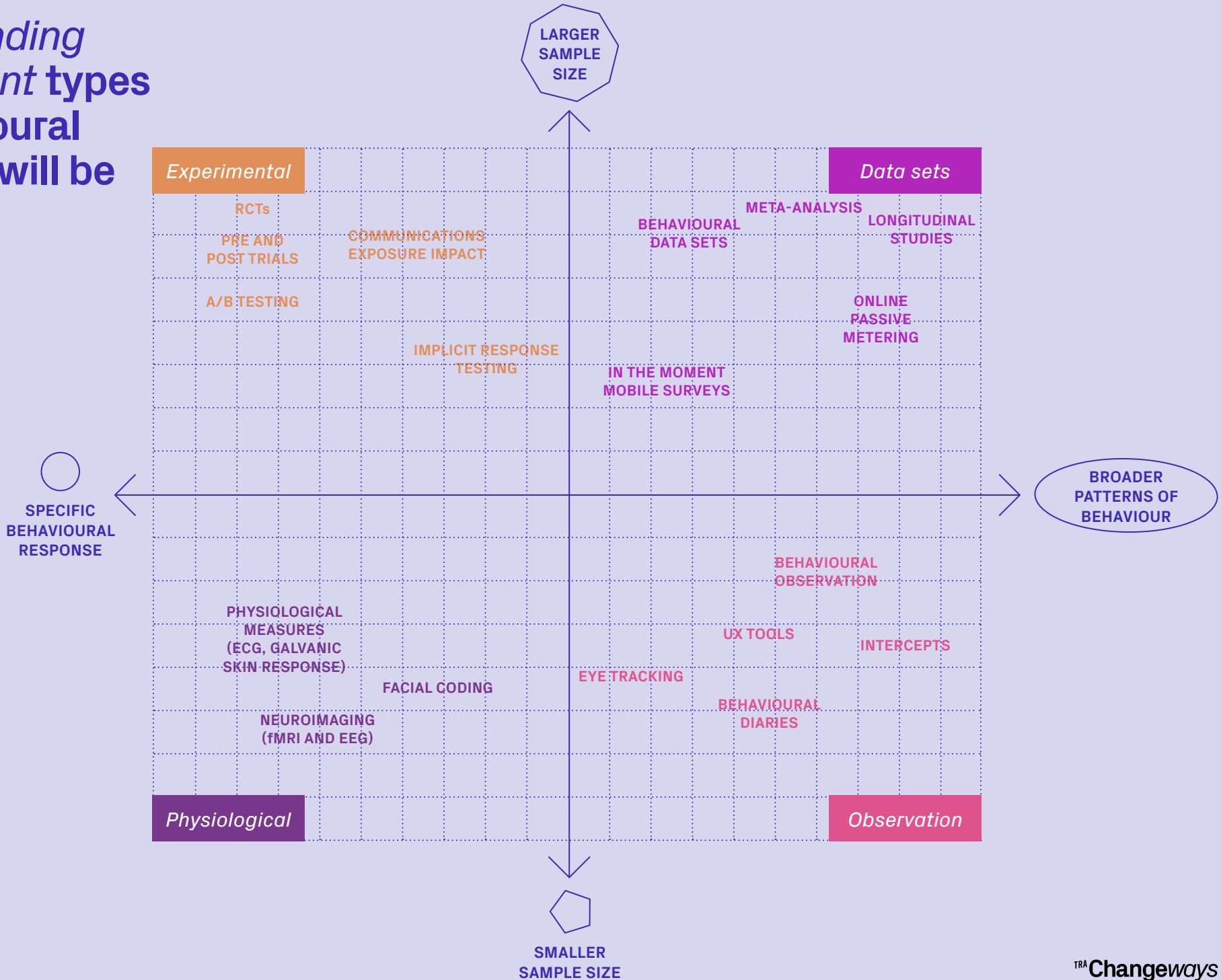
SMALLER SAMPLE SIZE

Are useful for a more in-depth understanding and for more complicated behaviour that you can track over a full experience. Also useful for exploratory research or pilot studies before scaling to a larger sample group.

LARGER SAMPLE SIZE

Have greater statistical power and can help detect meaningful differences or relationships between variables.

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Understanding *the different* **types of behavioural data that will be collected**

LARGER SAMPLE SIZE

Experimental

Data sets

RCTs

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Physiological

Observation

SMALLER SAMPLE SIZE

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Experimental

Experimental methodologies involve changing one or more variables to measure the effect. Experimental research can be useful when trying to establish a cause-and-effect relationship between different variables.

Best suited for: Larger sample sizes, specific behaviour.

Example: Testing to see the effectiveness of a social norm message versus a loss aversion message when it comes to motivating people to start using a password manager.

Limitations: Generalising findings to the real-world context can be difficult, depending on the conditions of the study. Groupings of people and experiments need to have a large and diverse sample to account for differences between specific groups.

Data sets

Behavioural data sets – such as census data, engagement metrics, purchase and spend data and CRM data – can help us understand broader patterns of behaviour. The data is often captured in a non-experimental setting and therefore is often representative of the real-world behaviours.

Best suited for: Larger sample sizes, broad patterns of behaviour.

Example: Traffic data, location tracking data and public transport data (locations where people tag on and tag off), can tell us the most common trips and destinations and when they were taken.

Limitations: Data sets do not always provide the underlying motivations behind the data or the important context in which the behaviour occurred. Watch out for data validity and how representative the data is of the population of interest.

Physiological

Physiological methodologies capture our physiological or unspoken System 1 responses to a stimulus, such as the electrical rhythms of our heart, facial reactions or skin conductance. This is useful for when responses or behaviours can be hard to detect.

Best suited for: Smaller sample sizes, specific behaviour.

Example: It can often be hard for people to articulate their reactions. Facial coding and reaction times can help us understand people's System 1 responses to particular messaging or communications.

Limitations: Some of these methods require people to wear clunky or invasive technology which can limit the real-world test scenarios of the research. Findings tend to give one specific behavioural response rather than a complete picture of the behaviour.

Observation

Observing behaviour can be done in the environment in which the behaviour occurs, making it useful for understanding real behaviour in the real world. This includes observing how the broader environment can affect behaviour.

Best suited for: Smaller sample sizes, broad patterns of behaviour.

Example: Observing people trying to navigate through a train station they've never been to and using eye-tracking glasses to understand what navigation cues they are using.

Limitations: Observation often only captures visible behaviours, not the underlying motivations. It can also be affected by observer bias and subjective interpretation. Watch out for self-reporting measures as they be influenced by biases such as social desirability bias, leading questions and memory bias.

GLOSSARY OF BEHAVIOURAL SCIENCE METHODOLOGIES

Experimental

RCTs (Randomised Control Trials): Experiments in which participants are randomly assigned into different groups (e.g. a treatment group versus a control group) to test interventions.

Pre and Post Trials: Experiments that measure outcomes or changes in behaviour before and after an intervention.

A/B Testing: Two (or more) versions of a message, website, product or service are tested against each other to determine which is more effective.

Communications Exposure Impact: Measures the impact messaging or communications in the real world has on people's behaviours and attitudes.

Implicit response testing: Measures unconscious attitudes and biases based on people's reaction times.

Data sets

Behavioural data sets: Data and information that captures peoples behaviour. Some examples include:

- Census data
- Purchase and spend data
- Engagement metrics
- CRM data
- Location tracking data

Meta-analysis: Merging and analysing findings from independent studies using statistical methods.

Longitudinal studies: Collecting data from the same participants over time to understand the change in behaviour and other measures, such as physiology and attitudes, over time.

In the moment mobile surveys: Short surveys delivered to people's phones in real-time, typically in response to an event or around the time of a particular behaviour.

Passive metering: Tracking people's online behaviour across digital devices.

Physiological

EEG: Electroencephalogram that measures electrical activity in the brain. It can be used to test which areas of the brain respond to stimulus, and to what extent.

ECG: Electrocardiogram measures the electrical activity of the heart in response to different stimulus.

fMRI: Functional magnetic resonance imaging measures brain activity by detecting blood flow.

Galvanic Skin Response: Measures electrical conductance of the skin which can indicate changes in emotional states.

Facial Coding: Using software and video capture to analyse facial expressions and movements to infer emotional responses and measure engagement.

Eye Tracking: Glasses that capture eye movement to measure what people are looking at.

Observation

Behavioural observation: Capturing and recording people's behaviour in the real world. Some examples include:

- Observers watching a behaviour over time, capturing frequency, duration and other measures of the behaviour
- Reviewing CCTV footage or video capture

Intercept interviews: Interviews conducted with people in real-world settings to capture and understand the context and attitudes around a behaviour.

UX tools: Capture people's responses to websites, mobiles apps and other digital products and services. This includes mouse tracking, screen and user video capture, Google analytics and eye tracking.

Behavioural diaries: Self-reported accounts of people's behaviour. This can be of natural behaviour as and when it occurs, or a behavioural mission where participants are completing a new or different behaviour.

Discover knowledge to help you unlock behaviour change pathways

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