



# Habits

## The Holy Grail of Marketing

How to make, break and measure them

Crawford Hollingworth & Liz Barker



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# Introduction



**Stephen Maher**

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Over the last two years, we at **The Marketing Society** have published over 40 articles from **The Behavioural Architects (TBA)**. These articles talk about how breakthroughs in behavioural sciences, and in behavioural economics in particular, are offering marketers powerful new tools and frameworks for today's interconnected world of marketing.

TBA's excellent series from last year on habits ranked as one of the most read by our members across the entire content in our digital clubhouse. Habits, without doubt, are at the core of all great marketing - whether marketing is trying to build them, stop them, change them or augment an existing habit with a new one.

In this publication, we bring all of this great learning together and take you on a journey through the very latest thinking around habits and habit formation. This is a must read for all today's marketers.



# Creatures of Habit



Introduction by  
**Crawford Hollingworth**  
Co-Founder of The Behavioural Architects

Much of our daily lives are dictated by our habits, whether they are behavioural, emotional, linguistic or even our thought processes. **Social psychologists estimate that 45% of our daily behaviour is habitual.** And yet, we often have very limited understanding of them; as our habits and routines are so automatic, we very rarely think about them. In the last few years, insights from the behavioural sciences have been shining an illuminating light on how to explain habits as well as the most effective tools and techniques to break and build habits.

In this three-part exploration into **cutting edge behavioural thinking around habits** we tackle some of those important questions on the lips of marketers, researchers and anyone interested in behaviour and behavioural change.

**Part I:** We examine the theory behind **habit formation** and what we can do to **put a stop to sticky, engrained bad habits.**

**Part II:** We go on to explore **ways of creating new (better) habits in our lives**, like committing to take regular exercise, keeping in better touch with friends and family, eating more healthily, or reading more often.

**Part III:** We look at how we can **measure habit strength** through different sets of indicators and why measurement is useful.

## Part I: Changing sticky habits and making the subconscious, conscious



“

*Habits form the bedrock of everyday life. Without habits, people would be doomed to plan, consciously guide, and monitor every action, from making that first cup of coffee in the morning to sequencing the finger movements in a Chopin piano concerto.”<sup>1</sup>*

### The power of habits

Much of our lives are governed not by our conscious decisions or thoughts, but by our habits. Once embedded, the very **stickiness of habits** means they're tenacious and hard to dislodge. And even if we are aware that they are bad for us we find it difficult to stop doing them. In 1954, Iain Macleod the UK Health Minister of the time and habitual smoker, famously chain-smoked through a press conference about the dangers of smoking and lung cancer, despite being convinced of the link between the two.

We can also be quite **unaware** that some of our actions *are* habitual. For example, we might make a cup of tea and add a couple of biscuits on the side (not realising that we add that couple of biscuits *every time* we make a cup of tea), or we might unknowingly use particular expressions so often that we drive other people mad (if we were ever to read a transcript of our conversations we'd probably be horrified to hear the number of 'you knows' or 'likes' or 'super-this', 'super-that' that punctuate our everyday lexicon), or each morning at work we might find ourselves 'unable to function' without a first

cup of coffee. These are all habitual behaviours that have become fixed in our neurological patterning. Sometimes our habits are so **embedded in our subconscious** that they get us running on autopilot. When we're driving a familiar route, for instance, we might have no conscious recollection of any details of the journey, or trolleying our pre-ordained circuit of the supermarket we probably won't notice anything about the other people we pass and we're totally thrown if the layout of the store and product display has been altered.

## Why habits form

Habits serve a significant purpose – certain behaviours become automatic mostly to make us **more efficient**. We can all recall being in a totally new environment – perhaps working abroad, or visiting friends with a very different lifestyle. It's often disorientating and awkward, everything seems to take much longer because every single choice and behaviour requires 100% of our attention. Eventually though, new habits develop which make our lives much **smoother and more fluid** – and these new habits actually **free up our minds** so that we can do other things in parallel. As Theodore Roosevelt said:

“*Habit and routine free the mind for more constructive work.*”

## How habits form

Our habits are deeply engrained in our brain and muscle memory so much so that they become automatic. We can define this autopilot behaviour by three qualities:

- **Minimal awareness** – we can carry out the action without needing to pay much attention to what we are doing
- **Efficiency** – we can carry out a habitual behaviour in parallel with other activities demanding more attention
- **Lack of control and conscious intention** – we do things without actual conscious intention or desire and it's actually difficult to stop yourself from doing them or to do them differently<sup>2</sup>

Habits are believed to be formed through the interaction of three elements. Charles Duhigg, author of the book *'The Power of Habit'*<sup>3</sup> defines these three as:

 **Trigger or Cue**

 **Routine**

 **Reward**

Each element plays a particular role in embedding the habit (also see diagram 1).

The **trigger or cue** is the signal to carry out the habitual routine for example, leaving your trainers by the side of your bed might be the cue you need to get up and go running first thing in the morning, and taking a plastic bag along with you on a dog walk is the cue to pick up after your dog. The trigger can also be a preceding action, perhaps a habit in itself, creating a chained series of actions, or even a ritual, all of which are usually automatic and carried out without thinking.

A habit also becomes embedded simply through the **act of repetition** – doing an action over and over again – often in the same environment, so it becomes **routine** and engrained in our muscle memory; for example, driving, brushing our teeth or riding a bike all become *habitual* behaviours. When we first tried them, they were tricky to master (some trickier than others!), but after carrying them out day after day, they became **easy and automatic**. Scientists say that once we master a new task or skill, our brainwaves slow down – we become more efficient at carrying out the task and therefore have less need to think consciously about it.<sup>4</sup>

Finally, for some habits, there is also a **reward** attached, sometimes simultaneously or following the action. The reward can be tangible – tucking into a bacon sandwich after going for a long arduous run – or physiological - the dopamine release which provides the brain with a ‘feel-good’ reward during or after an activity, or even subconscious – a sense of achievement at the end of a routine task.

Each of these elements; the trigger, the routine and the reward, combine to fix the habitual behaviour in place. And once fixed, behaviour is **very difficult to change or stop**. A diary-based study<sup>5</sup> conducted by researchers at Duke University, North Carolina demonstrated that around 45% of everyday behaviours by students and other members of the community involved in the study were based on habit (routine behaviours – usually performed in the same location) rather than deliberate thoughtful actions.

Charles Duhigg usefully deconstructs his own difficult to shift **afternoon cookie habit** loop in his book and it’s the perfect illustration of the trigger, routine, reward structure on which our habits hang. Every afternoon at the office he would go to the cafeteria and eat a chocolate chip cookie which caused him to gain weight. He knew it was a ‘bad’ habit but it was a habit that he found hard to kick. The only way to do it, he realised, was to identify exactly how the habit worked. He soon discovered that the **trigger** for his cookie consumption was time: between 3pm and 3.30pm each day he walked to the cafeteria. The **routine** behaviour was the cookie consumption - and his ‘aha’ moment here was discovering that the cookie wasn’t actually the reward. This made it much easier to kick the habit of course. The *actual reward* was *the chance to socialise with his colleagues*. Once he realised this, his new routine behaviour was simply to walk over to his colleagues’ desks at the same time in the afternoon and have a cookie-less chat. A new less weight compromising habit had been formed.

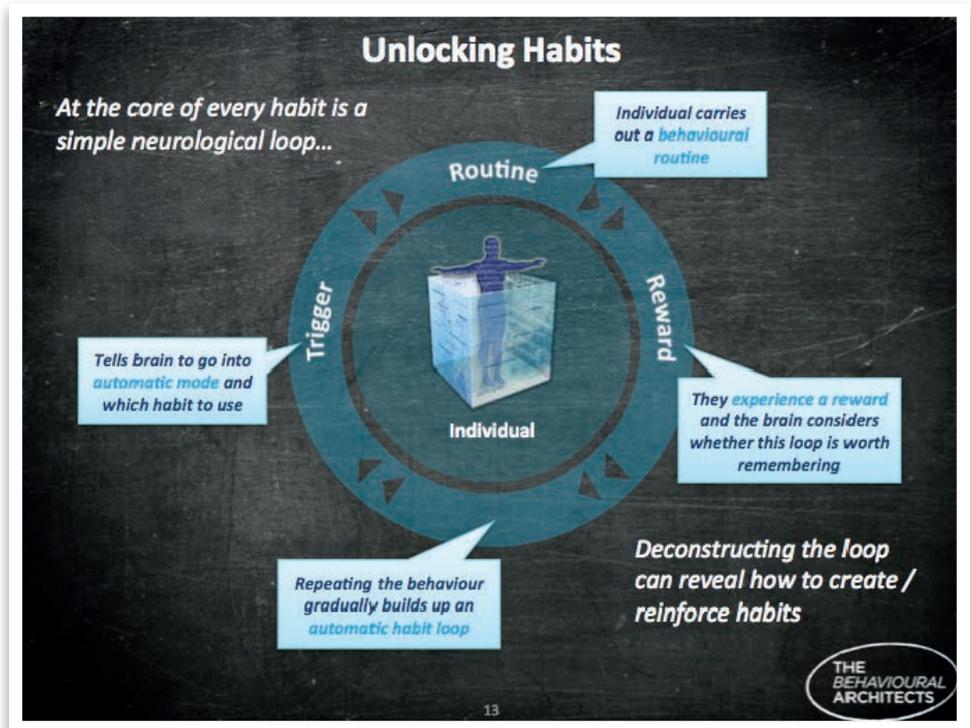


Diagram 1

Source: Based on Charles Duhigg's 'Habit Loop', 'The Power of Habit', Random House, 2012

As Duhigg shows, there are strategies we can apply to help to break habits and change our ways for the better once we understand the trigger, routine and reward looping of our habits. And our awareness of unconscious, habitual behaviour can also be heightened by

the use of clever, innovative design which can surface our habits - moving them from our subconscious to our conscious mind. **We look at a few innovations in the rest of this article.**

## The honking habit

Anyone who has visited India will know that the urban roads are crazy and chaotic. **Drivers are in the habit of using car horns frequently** (for almost every occasion in fact) often 'honking' to signal driver intention or simply their presence on the road, rather than in anger, and this obviously creates a noisy, frustrating driving experience. Decibel levels are often well past the threshold for human pain. Anti-honking campaigns to raise awareness have failed in the past and Audi responded to the honking problem by making their car horns both louder and more capable of withstanding the driving demands of the Indian consumer. Audi's India head Michael Perschke said

*“You take a European horn and it will be gone in a week or two. With the amount of honking in Mumbai, we do on a daily basis what an average German does on an annual basis.”<sup>6</sup>*

Whilst drivers may well feel safer on the road if they can honk to announce their presence on it, there is a growing problem of hearing loss in urban centres in India and traffic noise is responsible for much of it. One study into the problem showed that **75% of traffic officers in Southern Indian cities had permanent damage to their hearing** caused by their daily exposure to traffic. So no harm then in the work of Indian branding and behavioural design consultancy, Briefcase, who tested a more behaviourally orientated solution to this problem by attempting to reduce honking.



Their aim was simply to make drivers more aware when they had honked. They worked with Honda to **add a simple red button to the dashboard**. When drivers honked their horn, this button beeped and flashed continuously until they turned it off. They also printed a little frowning face on the button. They added this design to a set of Honda City and Honda Swift cars which they then tested with 30 drivers over 6 months. The Horn Reduction System reduced honking for all drivers by an impressive 61% on average.<sup>7</sup> The designers speculated that this removed much of the indiscriminate, unnecessary honking from the driver.

Their design worked, not because it required drivers consciously to reduce the frequency with which they used their car horns, but because it brought the action of honking to the **driver's conscious attention** and then **disrupted the honking behaviour** by making drivers turn off the (annoying) beeping and flashing button in the car. The presence of the frowning face also

made use of **injunctive social norms** – things we know we shouldn't do in society – to remind drivers that honking their horn was largely an anti-social action. The device also cleverly tracks how much drivers use the horn – silently observing and tracking behaviour – so usage analysis can rely on actual behaviour rather than subjective self-reports, providing the designers with far more accurate records of behaviour.



## Mindless eating

Another study looked into the **absent-minded eating of popcorn** at the cinema. We often eat mindlessly, even when we aren't really hungry. Researchers David Neal and colleagues conducted an experiment to identify the factors that disrupted or maintained the habit of eating popcorn. They took 158 participants into a cinema to watch movie trailers whilst also giving each of them a bucket of stale popcorn to eat. Participants agreed that eating stale popcorn (as opposed to fresh) gave limited satisfaction, but researchers found that how much of the popcorn they ate was dependent on another factor. One group was told to eat the popcorn normally (using their dominant hand) and a second group were asked to eat using their non-dominant hand (so if someone was a right-handed eater, they had to use their left hand to eat the popcorn). They found that **those using their non-dominant hand ate significantly less popcorn** than those using their dominant hand. It worked because eating with their non-dominant hand was not an automatic, habitual behaviour and so required conscious attention.<sup>8</sup>

“*Habit change may require interrupting fluid habit execution.*”  
the researchers said.<sup>9</sup>

(Of course it should be pointed out that regardless of which hand they used, all the participants consumed some of the stale popcorn, because the habit of eating popcorn - any kind - when you're at the movies is so deeply engrained!)



The red dividers also led to a more accurate estimation of actual consumption. On average, students eating the crisp tubes without dividers underestimated their intake by 12.6 crisps whilst those with red dividers were off by less than one crisp.



Another study into mindless snacking was conducted by behavioural scientist Brian Wansink who looked at how to make consumers more conscious of the *amount* they were eating by **using colour to alert the brain**. He found that inserting **edible serving size markers** – dyed red – into tubes of crisps helped to curb overeating among 98 college students. In addition, the dividers made students much more accurate in estimating how many crisps they ate. In the first study, the red markers were interspersed at intervals, each designating one suggested serving size (equating to seven crisps) or two serving sizes (14 crisps). **Students who were served tubes of crisps containing the red marker crisps consumed about 50% less than the control group.**

“An increasing amount of research suggests that some people use visual indication - such as a clean plate or bowl - to tell them when to stop eating. By inserting visual markers in a snack food package, we may be helping them to monitor how much they are eating and interrupt their semi-automated eating habits.”<sup>10</sup>  
*Brian Wansink*

So giving feedback allows us to consciously measure how much we are eating and make us more aware of the amount we have consumed.

## Let there be light!

Not only do we sometimes mindlessly over eat, but we often needlessly **waste energy in the home** simply because we are not in the habit of turning off appliances. We habitually leave the TV on standby or forget to turn off a lamp. Design can help by alerting our conscious minds to our neglectful behaviour.

Dr Marc Hassenzahl is Professor for Experience Design at the Folkwang University of Arts in Essen, Germany. He studies non-coercive design and has developed a number of solutions to make us more conscious and aware of our unconscious behaviour.<sup>11</sup>

One is the **'Forget-me-not'** light: a reading lamp that has to be periodically touched to stay on, making users conscious of the fact that the light is providing light for them. After being switched on the lamp gradually closes its petals like a flower (see image), and its light slowly dims. If one of the petals is touched the lamp re-opens and shines brightly again.



Source: Marc Hassenzahl & Matthias Laschke

Another is the **'Never Hungry Caterpillar'** - an extension cable that remains still when a TV or similar device is on, but goes nuts when switched to standby, twisting and turning and appearing to writhe in pain and agony. The **movement is intended to catch our attention** and bring our neglectful behaviour into our consciousness, and it's a far more effective method than the passive red standby light on the TV. This alternative design creates a visible, movement-based, highly emotional cue to tell us that we are wasting energy. We can almost feel the caterpillar's pain.



Source: Marc Hassenzahl & Matthias Laschke

Hassenzahl says

“Contemporary design is not used to making things troublesome. We are used to making things convenient. We are used to meeting the needs of our clients whether it is good for them or not. But what we actually need to instil change is ‘friction.’”

## Conclusion:

**Part I:** Changing sticky habits and making the subconscious, conscious



**Repeat after me: trigger, routine, reward; trigger, routine, reward; trigger, routine, reward = HABIT**

The behavioural sciences have given us a simple model for understanding the architecture of how and why habits are formed. By thinking about or surfacing an existing or desired habit loop and defining the triggers or cues that establish the behavioural routine to the psychological rewards that cement the circuit, we can see how habits can be made or broken by using behavioural design for example, or by changing the environment. **And because habits are the backbone of all of our behaviour, this gets everyone excited.**

**Now we know how to break habits we can think about building new ones – the Holy Grail for Marketers and anyone trying to change their ways.**

*'The chains of habit are generally too small to be felt until they are too strong to be broken.'*

*William Shakespeare*

## Part II: A blueprint for building new habits



*We become what we repeatedly do.” Sean Covey*

Making changes in our own lives or getting others to change their behaviour is harder than we think. It’s tough – people are naturally **creatures of habit**, can even be slaves to them – and habits are usually deeply embedded. Trying to unravel existing habits and getting people to change and do something new is one thing and can be a major mental battleground, trying to initiate a new habit or way of behaving from a standing start as it were, is something else entirely.

There are numerous examples of initiatives and campaigns which have succeeded in altering *attitudes* and even *intentions* to change behaviour but which have often faltered at

the final hurdle - that of **behavioural change itself** - especially when habits are strong and behaviour is deeply embedded. For example, an information campaign designed to reduce substance abuse actually increased use.<sup>12</sup>

Over the last decade or so there have been **breakthroughs in our understanding of habits**, analysing our routines in micro detail for instance, in order to determine how habits are formed. Research has also looked at how to shape and change behaviour whether via the powerful influence of contextual changes, or using an existing habit to trigger another, or creating a psychological or even tangible reward for a new behaviour.

In this section we look at some of this research, in particular that which deals with forming new habits. The magic number three would seem to be key if we want to learn and engender a new behaviour - so here are three steps to habit formation:

## Step 1. Choose a new habit or behavioural goal and focus on it

Pick a particular behaviour you want to add to your life and make a habit of. Or, from the perspective of a marketer or policymaker, **decide on the particular behaviour** change you want to instil in others.

With a particular new behaviour (habit) in mind, the next two steps are based around a very simple model to **promote repetition of the behaviour**. When thinking about behavioural change it is critical to consider the whole picture, and to be particularly conscious of what's been termed the habit loop.<sup>13</sup> It's easy to do something differently just one time, but hard to incorporate that behaviour change long term. This model forces us to think about the neurological loop at the base of a habit. Habits are built through context-dependent repetition and following the two steps – first identify the triggers (or cues) and second, the rewards for a new habit – helps to build that repetition and create a habit loop by developing automaticity – a key feature of any habit. Some even believe

**automaticity** is the essential feature. Both the repetition and reward steps are equally important so it's essential to consider both.

As behavioural experts Bas Verplanken and Henrik Aarts state, habits are

“*Learned sequences of acts that have become automatic responses to specific cues, and are functional in obtaining certain goals or end states.*”<sup>14</sup>

## Step 2. Identify the behavioural cue or trigger which will drive your new habit

Habits are triggered by the context we are in and the circumstances which cue the particular behaviour. So when you're looking to engender a new habit, it can help to analyse and identify the possible existing contextual triggers or potential cues to facilitate this. A useful rule of thumb is to consider what prompts us to do certain things - **'if Trigger X happens, then we do Behaviour Y'**. Triggers do not always need to be blatantly obvious, they can be subtle too – the key thing is that you are aware of them, even if only subconsciously.<sup>15</sup>

### Triggers fall into five primary context types:<sup>16</sup>



#### Location

Where we are



#### Time

What time of day or year it is



#### Other People

Who we're with, and what other people around us are doing



#### Emotional State

How we feel, what mood we're in



#### Immediately Preceding Action

What we've just been doing

Connecting new behaviours to existing behaviours – a concept known as **'piggybacking'** is a strategic approach to new habit formation. For example, **Febreze**, the air freshener from P&G was successfully marketed to consumers as the reward at the end of a cleaning routine – the finishing touch if you like – so it became a habit which was initially piggybacked onto the end of a cleaning routine and gradually became the inextricable reward part of the routine itself. Suntory, the Japanese whisky group, started to serve the humble **Whisky-Soda** in pint glasses, in order to piggyback the drinking experience onto well-established beer drinking behaviours. This drink format – dubbed the "highball" – has helped sales of whisky in Japan to rise by 10% a year over the past three years. So it's wise to look at existing routines and work out if a new habit can be added to an existing one.

As B J Fogg of Stanford University's **Persuasive Technology Lab** is fond of pointing out, it also

helps if you make new habit building easy and piggybacking or paralleling one habit onto or alongside another are good ways of doing this. So if you're trying to introduce a new habit it makes sense to lean on an existing behaviour and try not to overreach yourself. One of Fogg's own practices, based on his **'Tiny Steps'** approach, is described by him here and it shows how you can parallel a new behaviour with an existing one:

“One practical habit is, as soon as the phone rings, I put on my headset and I start walking. This has grown to lifting kettlebells or doing little one-leg squats while I'm on the phone. The desired behaviour is to be active and working out in these small ways. I'm on the phone two to three hours a day, and now it's a habit that I probably can't stop. When I take calls, I'm up and walking around. I've created all these tiny habits in my life, from really practical to kind of crazy.”



### Step 3. The Power of Tangible, Subconscious and Biological Rewards in Building a Habit Loop

In almost all habitual behaviours we can identify a reward element that gives the habit its addictive appeal. Since we know that the reward is the bit that fixes the habit in place it makes sense to set up the reward structure if we're aiming to engender a new habit. Creating an incentive or reward will help to **motivate and encourage** us to carry out a particular behaviour, and a reward is especially important if the new habit we want to engender might seem difficult or time consuming. A reward might even exist already – we simply need to make it more overt and appreciated. Secondly and crucially, it can help to **reinforce the routine** and make sure we keep on repeating the new habit, eventually making it automatic. The type of reward can be tangible eg a treat after a work, or more subconscious - perhaps just feeling good about yourself:

He describes the genesis of a piggybacking/tiny steps habit which began with a simple intention to do two push ups each time he used the bathroom.<sup>17</sup> The **push up habit not only became routine**, it evolved into a full blown work out with Fogg routinely hitting 100 push ups. As a result of a tiny habit, hitched to a very routine behaviour, a consolidated, committed practice was born - and the reward? Fogg lost weight and gained stamina. A possible mantra for instilling the piggybacking habit could be

*'After I...' or 'When I...'  
[insert routine behaviour],  
'I will...' [insert new habit to engender]'*

*Signed.....*

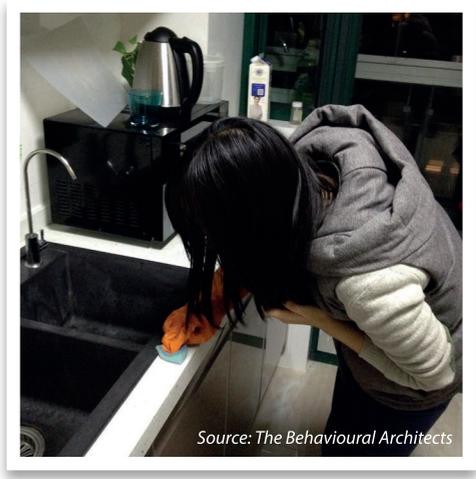
**Tangible rewards:** A simple example might be cycling into work and picking up an espresso from your favourite coffee shop once you've parked your bike. Or the reward can retrospectively drive the behaviour - going to the gym might mean you feel justified in eating dessert with dinner. A study on **travel habits** found that free bus passes in Stuttgart helped to create a new habit of using public transport among people who had recently moved to the city. Use of public transport rose dramatically

from 18% to 47%.<sup>18</sup> In this case, the reward of free bus travel might actually be the main driver behind the habit. A tangible reward could also be getting closer to or actually achieving a goal, so keeping a written record of smoking free days, or laps swum in the pool, or kilometres run can be a strong motivator.



**Subconscious rewards:** A reward can be **less tangible** – perhaps a feel good sense of belonging among colleagues at the pub, or a **self-esteem boost** from a shopping spree. It could also be a **sense of progress** at the end of the day on a project at work. The Behavioural Architects recently carried out some consumer research on kitchen surface cleaners and discovered that the hidden reward for using a new, better product was actually a social reward and sense of empowerment; friends and family of the housewives who used the cleaning product found the newly cleaned kitchen a more pleasant place to be and so were more likely to congregate in the kitchen

after dinner. The reward for the housewives was less social isolation and more family interaction.



Source: The Behavioural Architects

**Pleasure-based, physiological or biological rewards:** Some enjoyable behaviours prompt your brain to release the **feel-good chemical dopamine**. This is often used to explain ‘runner’s high’, and it is known to contribute to drug or gambling addictions. Food, and comfort-eating in particular, can also provide a psychological reward and smoking delivers a nicotine based reward.

These different types of rewards may not be mutually exclusive either – they can be layered, or there can often be a **short term tangible reward** combined with a **longer term goal**. For example, brushing your teeth rewards you with a tangible, clean, minty fresh sensation in your mouth, but also rewards you with healthy, white teeth throughout your lifetime – and fewer fillings...

## Behavioural Strategies which help to promote repetition

Although creating triggers and identifying or building in a reward for a new habit are certainly the backbone of bedding down a new habit, there are a number of **additional strategies** or opportunities to consider which can help to build repetition and strengthen the automaticity of a habit. Here are four to think about:

 **Commit to a plan:** New habits don't just happen. We need consciously to work out how to build them into our lives. One technique is to make an **exact plan**. A study which looked at people trying to create a new habit of daily flossing found that those participants who first outlined when and where they would floss each day flossed more frequently over the four week intervention period than those who did not.<sup>19</sup> By thinking things through, you are working out your triggers, in this case *being in the bathroom*, and by stating what you will do - flossing every day - you are *committing* yourself more firmly to actually doing it. Behavioural scientists call this **commitment bias** - we are more likely to carry out a task if we commit to it, especially publically. Where the habits you want to engender are likely to take place at home, it would help if you were to announce to family members exactly what you plan to do. (Other forms of commitment bias might involve teaming up with another person because it makes you responsible to them; for instance a jogging partner or a fellow smoker you make a pact to quit with.)

Making a plan might also involve the breaking down and **removal of any barriers to forming new habits**. For example, a barrier to commuting to work by bike might be poor knowledge of cycle routes.<sup>20</sup> So investing a few hours to read a cycle map, or even practise or experiment with routes on a quiet Sunday morning when you are not in a rush could help to break down those barriers.

 **Make a small change or addition to a stable context:** Much of our context and the routines we follow are fixed partly because we tend to prefer routine and automatically seek it out. Our lives are for the most part, constructed of deeply embedded routines - researchers have demonstrated that as much as 45% of our daily actions are habitual - so you need to be clever to make any lasting changes to your routines. One useful approach is to **build new habits within your existing stable context** so that behavioural patterns will more easily establish themselves, because the same trigger(s) are there every time - every day, every week.

A project to improve **water sanitation in Kenya** needed to get villagers to **chlorinate** their water. Poor water sanitation is a major cause of illness in developing countries and using chlorine tablets is a simple and effective way of purifying water. However, despite the availability of free tablets, people were not using them, largely because they were not in the habit of using them. The research team knew that the villagers collected water every day so they designed and **installed chlorine dispensers** at the point of water collection (see image).

They also made the **default** amount of chlorine dispensed match the standard size of container the villagers carried making it easy and simple to use.<sup>21</sup>



When people have lives where contexts are fluid and less predictable, it can be harder to form new habits since the contextual trigger may not always be present. If **working patterns are very changeable** in terms of time or location or both, people face bigger barriers for developing desired habits and routines. In the same way holidays, business travel and even weekends can often disrupt the embedding of new habits because they change the context so completely. A study which followed adults enrolled on a **weight loss intervention programme** found that although people were able to begin developing healthy habits in the workplace during the week, these new patterns of behaviour were often disrupted at weekends and during holidays:

One participant said

*“Weekend evenings have been a bit of an issue over the eight-week program because you go out or get invited out for a meal with friends and you all have a drink and la la la!”*

Another participant said

*“My last two weeks have been a bit of a disappointment...I was on holiday and it was takeaways every night... But since I've been back from holiday I've gone straight back to it.”*

For those with varied, frenetic and unpredictable weekdays at work, weekends may be a better opportunity to build habits since they may be more in control and in a stable context at home.

 **Take advantage of major permanent disruptions:** A major, permanent **life change** provides one of the easiest, natural

opportunities to create new habits since it disrupts existing routines so completely, changing the context and providing a new space to replace with new habits. It might be a permanent change in your environment; a new life-stage, **moving house** to a new location or **beginning a new career**. On average, Americans move every five years<sup>23</sup> – so every five years, provides a perfect opportunity to change your habits - if you live in the States. David Halpern of the Behavioural Insight Team in the UK says that successful behaviour change is sometimes...

*“...about intervening at the right time. If you contact people within three months of them moving into a new house, it's highly effective – because behavioural patterns haven't re-established themselves yet.”<sup>24</sup>*

Evidence suggests this type of context change can be effective because it **shakes up the status quo** before allowing it to settle, and in the settling process new patterns can be shaped. One study asked participants to write an account of a successful or failed life change experience. In analysing each of these stories, researchers found that 36% of accounts of successful behaviour change involved moving to a new location, whereas only 13% of accounts of unsuccessful attempts involved moving. 13% of successful behaviour change also involved

altering the immediate environment, whereas unsuccessful behaviour change was always characterised by no changes in environmental cues.<sup>25</sup> So if you're about to make a big change think about making some new habits while you're at it.

 **Practice makes habit:** It takes time to build a new habit, embed it in our routines and make it automatic. Realistically, no new behaviour is going to become part of your life overnight. A study conducted by Phillippa Lally and colleagues at the Health Behaviour Research Centre at UCL in 2009 found that it took anywhere between **18 days (2.5 weeks) and 254 days (over 8 months) to cement a new habit. The average was 66 days.**<sup>26</sup> And these were pretty simple new behaviours such as eating a piece of fruit with lunch or drinking a glass of water after breakfast. Moreover, if you are changing a habit, rather than adding a new one, your brain will never forget the old habit – the same neurological loops are still there - and the old behaviour will come creeping back very easily if you let it. So to build a new habit, it is necessary to keep on doing it – for many days - until it becomes automatic.

## Conclusion:

**Part II:** A blueprint for building new habits



When you think about building new behavioural habits think about how to identify the right **contextual triggers** [and remember that contextual triggers can come in all shapes and sizes]. Then think about the importance of the reward or **reward mix** from overt to deeper psychological rewards. And together with the actual desired behaviour conceptualise the habit goal as a behavioural loop with clear structural foundations and suddenly it will seem more achievable.

**But also remember cementing a habit takes time - it can take on average **two months** to build a new habit, to form and ingrain that neurological loop - so perseverance is all.**

*"Habits are at first cobwebs, then cables!"*  
*Spanish Proverb*

## Part III: How can we measure habit strength?



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*Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it.” H. James. Harrington*

We often can't help but point out the irritating habits of others... 'You never turn the lights off.', 'Could you put your dirty plate in the dishwasher once in a while?', 'Stop fiddling with your nails, it's really annoying..' and so on. Perhaps though, we are less aware of our own habits and couldn't begin to guess at the routine behaviours that drive people we don't know particularly well. And that's not surprising because sticky habits tend to be bedded down deep into automaticity. **So how can we measure the strength of a habit and how embedded it is in our routine? Would it shift easily if we tried to dislodge it or is it deeply locked in?**

### 1. Why measure habits?

Experts involved in behaviour change have realised that it is often useful to be able to measure habit strength - for two main reasons:

#### **To obtain a behavioural benchmark:**

It's useful to measure the **baseline** and get a benchmark of existing behaviour and the strength of habits in order to assess the effectiveness of any behaviour change intervention to amend (by increasing or decreasing habit strength) or break those habits. Does someone's behaviour change as a result

of a particular intervention and by how much? To what extent can an intervention weaken or strengthen an existing habit? To what extent does it create long-lasting change?

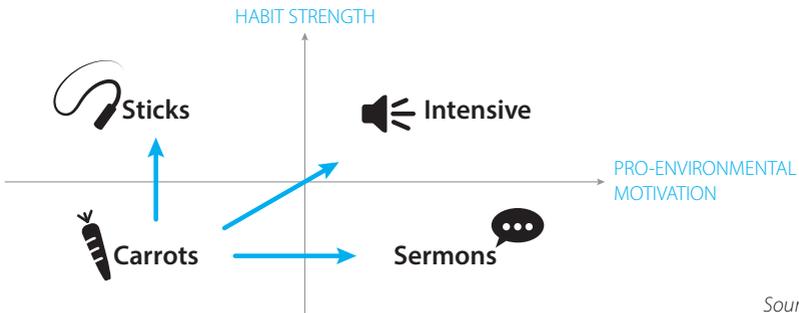
**To understand how hard we might need to work to shift an habitual behaviour: What type of intervention is required? How much effort** needs to be put into an intervention and for how long? For some individuals it might take more effort to change or bed in new habits – for instance, people living alone often have more habits which are more deeply embedded than those living with other people, probably because the latter have to adapt their routines to others and are simply not able to be so set in their ways. Another crucial question might be **when can the intervention be discontinued?** For example, a recent working paper by **Hunt Allcott and Todd Rogers** looked at the **energy saving behaviours** of households receiving Opower’s Home Energy Reports to see when the changes people make in their energy usage behaviour become fixed. They have found that long term behaviour change usually becomes embedded after a number of months, meaning

the specially designed energy reports – which are a little more expensive than standard ones – could be phased out once household energy use habits have been changed for good.<sup>27</sup>

DEFRA have developed a great **framework** with which to think about different approaches for those with stronger or weaker habits.<sup>28</sup> They suggest measuring both an individual’s strength of habit and also their willingness or motivation to change and plotting these indicators against each other to create a matrix (see diagram). In doing this we can classify someone into one of four different camps:

-  Those merely needing **little carrots** to tip over into a new behaviour
-  Those with stronger habits requiring quite firm **‘sticks’** to increase both motivation and change habits
-  Those with weak habits but strong motivation who might simply need short **‘sermons’**
-  Those needing quite **intensive efforts** to help change habits even when their motivation is high

**A Matrix for habits, motivation to change and sustainable lifestyles.**



## 2. What measures can give us an idea about habit strength?

To measure habits effectively, we need a good definition of what makes a habit. Behavioural scientists usually define a habit as multifaceted with **three key features: automaticity, frequency of repetition and a stable context.** And out of all the features, automaticity is – currently at least – considered to be the key determinant of habit strength by behavioural scientists. So these three indicators could be a good starting point. Beyond these, there may be a couple of other useful things to look at: the existence of a **reward** and whether someone considers a routine or habitual behaviour to be part of their **identity**:



How automatic a behaviour becomes is now considered to be a far better indicator of habit strength than frequency of past behaviour

and whether a behaviour is fully embedded. Automaticity exists when the behaviour is **unintentional or uncontrollable** and if we do not consciously initiate it but simply find ourselves doing it or having done it. Automaticity is also present when other tasks and actions are able to be performed alongside the habitual behaviour in such a way as to make us more efficient (automaticity enables multi-tasking), or if we can think about other things whilst performing that behaviour.<sup>29</sup> So measuring these indicators is an essential part of estimating habit strength.



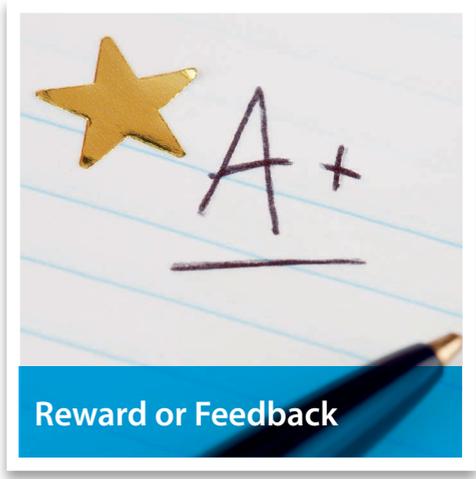
This usually means the frequency of past repetition, or the **number of times** daily or weekly the behaviour is carried out. The first measures of habit relied solely on a history of repetition or frequency of past behaviour, but experts now generally agree that this is a limited and potentially misdirecting measure. For example, a **doctor** might send many patients to the operating table, but you'd hope that the

doctor doesn't make a habit of this behaviour, and rather, is making a conscious, carefully-thought out decision. Habit strength might also vary even though the frequency of behaviour remains the same. For example, someone taking a **daily pill** might initially take the medication as a conscious and deliberate action (ie with no habit), but after several weeks they may have developed a strong habit so that the behaviour has become automatic. The frequency of behaviour - the regular daily pill - has stayed constant throughout, however.

**context** - finding ourselves in the kitchen in the morning we might automatically fill the kettle, once we get to the gym we set about our standard routine without giving it much thought (most likely heading for the same machine if we can get it), we also tend to route ourselves repetitively around the supermarket aisles, and there are undoubtedly myriad other activities we embark upon triggered by context. It may still be useful to collect or record this information, but relying on it as a sole indicator for habit strength could be misleading.



As we discussed in Part Two, performing a behaviour in the same context each time is often a key feature of habit. The context might be the **physical location or environment, the social context, or a particular time of day**. The context acts as the trigger or cue to initiate the behaviour and so can help to build or be indicative of a habit and therefore worth recording. However, it may not always indicate habit strength. There are plenty of engrained habits that are **prompted by the**



As we also discussed in Part Two, the presence of a strong reward, motivation or some sort of feedback created by the behaviour can help to build a habit. However, like context, the presence of a perceived reward may not reliably indicate habit strength. **Trying to gauge the size or strength of reward may not translate to strength of habit**. There are some habits where the reward may be small or perceived as small by the respondent, or even be subconscious and unrecognised by the

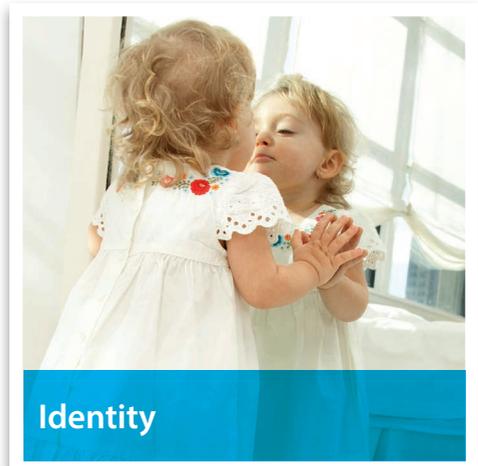
respondent. There may be other behaviours with large (perceived) rewards, yet the behaviour may not yet be a habit if the context is unstable or if the rewards are not yet recognised by the respondent. Rewards are often very complex – there could be several which overlap, making them difficult to measure and single out.

As with context, it may still be useful to record this information, but relying on it as a sole indicator for habit strength could be misleading. And measuring rewards is problematic (for the same reasons as we discussed above), particularly for self-report. **It may be more effective to gauge what rewards are, using visuals and words to prompt emotional associations.** For example we might get respondents to select words from a word cloud, or choose from a bank of images. Another technique we use is to ask respondents to select the **Ekman emotion** they feel most accurately captures their emotion in response to something. (Ekman found that there are a series of universal emotions such as anger, fear and happiness. See image)



*The 6 Ekman emotions demonstrated by Anna, Nat & Max of The Behavioural Architects.*

*Source: The Behavioural Architects*



Identity is sometimes thought to be influenced by habitual behaviours. We carry out a behaviour, speak in a particular way, or even have certain thought processes or reactions to events which we define as **'typically us'** and might feel strange if we did not do, or did something else. Moreover, we often seek to be consistent with our past behaviours in order to avoid what psychologists call **cognitive dissonance** – when we feel discomfort when our attitudes and beliefs do not match our behaviour. For example, research has found that people are more likely to vote if they are reminded of their identity as a past voter. As Bas Verplanken and Sheina Orbell point out

“Habits are part of how we organize every-day life and thus might reflect a sense of identity or personal style.”<sup>30</sup>

Whilst this may not be a factor in all habits, some could define someone and, in their eyes,

express their identity, so getting a sense of how much a habit or behaviour is considered part of someone's identity could be useful. However, some researchers believe that self-identity is not a useful component of habit to measure.<sup>31</sup> Moreover, it could be a tricky thing to assess through self-report – are we really aware of what is 'typically me'?

### 3. Some simple tools to measure habit strength – the Self-Report Habit Index

Armed with the five indicators we outlined above - frequency, automaticity, stable context, reward and identity - we can begin to think about how best to measure some or all of these in order to gauge habit strength. **Observation** can be a reliable and unobtrusive way of measuring, but can sometimes be limited since we can only identify how often something is performed and have to infer from this if a behaviour is actually a habit. Whether the action is automatic is much harder to measure from observation only. So **non-obtrusive, simple self-reporting** which can get respondents to think reflectively about daily activities can sometimes be a better approach.

One of the most widely recognised self-report measures used by behavioural scientists currently is the **Self-Report Habit Index (SRHI)**.<sup>32</sup> The 12-point SRHI is comprised of questions which assess three of the five elements outlined above:

1. Frequency or history of repetition
2. Automaticity
3. Identity

For each question, respondents answer the degree to which they feel it affects them using a **7-point Likert scale** ranging from agree (1) to disagree (7) (see Self-Report Habit Index).

### Automaticity only: The argument for a simpler measure than the SRHI



As with any measure, there are limitations. Respondents are highly likely to get tired of answering a 12 point questionnaire, especially if it needs to be done daily or for different activities. Moreover, because **new habits take on average 66 days to form**, any measurement of new habit formation needs to be tracked for at least this length of time. This is a long time to engage with respondents!<sup>33</sup>

## Self-Report Habit Index

	Behaviour X is something...	Habit definition subscale
1	I do frequently	History of repetition
2	I do automatically	Automaticity
3	I do without having to consciously remember	Automaticity
4	that makes me feel weird if I do not do it	Identity
5	I do without thinking	Automaticity
6	that would require effort not to do it	Automaticity
7	that belongs to my (daily, weekly, monthly) routine	History of repetition
8	I start doing before I realise I'm doing it	Automaticity
9	I would find hard not to do	Automaticity
10	I have no need to think about doing	Automaticity
11	that's typically 'me'	Identity
12	I have been doing for a long time	History of repetition

Source: Verplanken and Orbell (2003)

As **Phillippa Lally** and her colleagues observed during a three month study of habits.

“It is difficult to assess the extent to which completing the same questions every day affects people's responses.”<sup>34</sup>

Fewer questions (like those testing only for automaticity) might therefore be easier and quicker to answer which could lead to more reliable results.

One solution to this problem could be to measure habits simply through testing a subscale of the SRHI. Several studies and pieces of analysis have revealed that we can get the same results using various subscales using some or all of the 7 items which measure automaticity.<sup>35</sup> For example, **Benjamin Gardner at UCL** and his colleagues have developed a 4 item automaticity subscale called the **Self-Report Behavioural Automaticity Index (SRBAI)** and found it to be reliable. They asked seven different social or health psychology researchers with expertise in social cognition

(but little knowledge of habit theory) to give their views on which of the 12 elements were most crucial. Items 2, 3, 5 and 8 were most confidently and consistently judged to capture automaticity:

- I do automatically
- I do without having to consciously remember
- I do without thinking
- I start doing before I realise I'm doing it

They then took four existing studies of habits (car commuting, cycle commuting, snacking and alcohol consumption), using the full datasets from the SRHIs and compared the full 12-item score with their 4-item SRBAI score. For all four datasets, the SRBAI score was **strongly correlated** with the original SRHI and was deemed to be a worthy and equal substitution.<sup>36</sup>

## Can we build an even better measure? Food for thought

At The Behavioural Architects we take the tools described above as a starting point, and have been applying other techniques used in behavioural science to increase the reliability of self-reporting. For example:

- Could the SRHI questionnaire be **'chunked'** into a number of more manageable sections? Just changing the layout and way the questions are asked could improve responses
- Could the 7 point Likert scale be **simplified** and narrowed, reducing choice overload, yet still produce the same results?
- A specially-designed **smartphone or tablet**

**app** might also improve ease of use and reduce any potential barriers to reporting.

- Online and **mobile research** could also be an advantage in increasing the reliability of self-reporting. Prompting respondents as they are performing the behaviour in the moment could likely lead to more accurate and regular reporting.

As any good researcher knows, self-report may also be a problem. Respondents might want to appear consistent or committed to building the habit or provide answers which they believe to be socially desirable or fit with the perceived norm.

In this case, ways in which we can simply observe the level of repetition and frequency may be better. For example, simple **ethnographic observation** might be a good solution or via video recording and analysis. These are good for open environments – airports, shopping centres, roads, but are more difficult to run in-home.



For in-home tracking we might instead **use technological devices to track behaviour and measure habit strength**. For example, **Unilever** recently designed a toothbrush containing an accelerometer and gave this to a set of consumers to track how often and for how long they brushed their teeth.



Similarly, **Dr Val Curtis** at the London School of Hygiene and Tropical Medicine carried out a study to observe the habit of handwashing. She installed **wireless sensors** in motorway service station toilets – a movement sensor at the doorway and a second sensor in the soap dispenser – and found that of the 330,000 people using the toilets, a disturbing 32% of men and much more heartening 64% of women washed their hands with soap.<sup>37</sup> By observing the regularity by which consumers were brushing their teeth or washing their hands, we might well be able to deduce the strength of habit, or least whether a habit was firmly established – all without asking people a single

question. This type of research also allows for much larger sample sizes too. There is also more advanced technology. Curtis and her colleague Bob Aunger have also been developing **Real-Time-Location-System (RTLS) Monitors** – a ‘smart home’ system that enables detection of behaviours in the home and other frequently visited places.



Technology in the form of **smartphone apps** may also be able to start observing behaviour unobtrusively and yet accurately too. Apps are increasingly capable of achieving all sorts of things – from measuring our exercise behaviour and sleep routines to being able to tell us whether we have anaemia, skin cancer or breathing problems. So the possibility of tracking and recording other behaviours – and even measuring automaticity - is not pie in the sky.

## Conclusion:

Part III: How can we measure habit strength?



Thinking more deeply about the strength of habits or, put another way, the potential difficulty of achieving the behavioural change we desire, will allow us to look at a behavioural task with our eyes more wide open and will also deliver deeper **behavioural insight**. The framework around **repetition, automaticity and identity** empowers us with a meaningful architecture within which to explore habit loops and, with technology on our side, measurement will become more sensitive and more insightful, able to inform us more and more clearly whether we need to reach for the carrot, compose a sermon or look for a big stick!

“This is the real power of habit: the insight that your habits are what you choose them to be.”

*Charles Duhigg*

## Footnotes

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"By the end of this book you'll have a behavioural blueprint for understanding habits, because Crawford just gets it."

**Gemma Greaves,**

Managing Director, The Marketing Society



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