THE PURSUIT OF SAFETY

The science of behaviour has evolved to a point where behaviour-based safety (BBS) has become a core element for many companies. **Andrew Sharman** looks back at its roots and ponders where we go from here.

Think about the last time you were in a bad mood. Perhaps something didn't go as you planned at work? Maybe you had an angry word with your partner at home? Or the kids didn't tidy up. How did you behave? Did you slam the door as you left the room? Thumped the table with your fist? Raised your voice? Vowed never to buy more toys? Or did you calmly smile to yourself and let it all go?

As our individual behaviours come together with those of others around us, they collectively form and shape the cultures of the organisations, family units and social groups we belong to. The oft-used definition of culture 'the way we do things around here' may be simple but I think it's a great way to look at things – especially workplace safety culture ('the way we do safety around here') – because culture is all about behaviour.

In the beginning there was dog

The name Pavlov is recognised by many as the scientist who in the late 1800s showed that he could create a reflex behaviour in dogs; first, making them salivate by presenting them with a biscuit, then encouraging them to link the sound of a bell with being given the biscuit, so that in time, the dogs would salivate on hearing the noise – even without the presence of a treat. These early experiments in behavioural conditioning led to the subsequent stimulus-response psychological theory.

While appealing in its simplicity, we know that people are (usually) more complex than dogs, and their reflexes cannot always be as easily influenced. We must bear in mind that a stimulus – whether a biscuit, free lunch, or a monetary reward does not in itself elicit a particular response, it merely modifies the likelihood of a behaviour occurring.

Conditioning behaviour

Pavlov's classical experiments evolved into what we now call 'operant conditioning' where the worker responds to factors in his environment and moderates his behaviour accordingly. His behaviour is strengthened or 'reinforced' by consequences. The antecedent-behaviour-consequence model has become a staple in many organisations' approach to influencing safety behaviours. The antecedent (or 'activator' or 'trigger') invokes certain behaviours and a positive reinforcement strengthens the behaviour that produces it, while a negative reinforcement strengthens the behaviour that reduces the likelihood of the consequence.

Modern social learning theory has evolved along this line, but remember that the potential for occurrence of a behaviour depends on the expectancy that the ▶

particular behaviour will lead to a specific reinforcement which in itself is perceived to be advantageous – like Pavlov's biscuits for his dogs.

We must bear in mind that operant conditioning is just one element in the pursuit of safety. Safety is at once both a state and a feeling – it's essentially a by-product or effect of reinforcement. The things that make us feel safe are the things that provide the reinforcement, but it's these things, not the feelings, that we must clearly identify and focus on. The notion of pursuit indicates a purpose, a striving, a desire – we take action to achieve the state and develop the feeling of safety. But pursuit is, in essence, also just a behaviour that must be reinforced by something in order to generate it.

The advent of observation

Social philosopher Bertrand Russell initially rated Pavlov's work highly, concluding that he had made important contributions to developing a 'philosophy of the mind'. However, he later went on to remark that in studies of animals' behaviour, he could see strong links between the observer and the animal – for example, American observers commented that their dogs "behaved like Americans, running around in random fashion" while German dogs were found by their German observers to "behave like Germans, sitting and thinking".

Russell points out the influence of observer bias and local culture on behaviour – or at the very least the influence of culture on our observations of behaviour. But this wasn't novel thinking. Back in the mid-1600s, English philosopher John Locke argued that people viewed the world around them in a way they found congruent with their own personal values. Things they liked were approved of, and those that they considered unpleasant were thus judged as that. This is important for our consideration of behaviour in safety – if Locke's logic tallies with Russell's observations, could it be that we may make our own observational judgements based on how the situation looks and feels to us?

Reflexes and instincts

In the early 1920s Harvard Professor William McDougall explored the differences between reflex and instinctive behaviour, offering that instinctive behaviour "involves the knowing of some thing or object, having a feeling in regard to it, and (then) a striving towards or away from it."

McDougall referred to the instinct of moths to be attracted towards a light source and bees towards fragrant flowers. A few years later in 1936, social psychologist Kurt Lewin, through his studies of group dynamics, widened the lens observing that behaviour was a function of the person and their interaction with their environment.

Looking inward and onward

Behaviour is not only about the observer's view; self-knowledge is critical. We must suspend our preconceptions and actively engage with others in order to understand their behaviour and how the situation actually looks to them.

Burrhus Skinner – considered by many to be the Godfather of behaviouralism – advised that, "a person who has been made aware of himself by the questions he has been asked is in a better position to predict and control his own behaviour." Skinner indicates that self-knowledge is shaped by society – it's only when we become aware that our behaviour is important to those around us, that it becomes truly important to ourselves.

Between the late 1950s and early 1970s people like Skinner, Albert Bandura and Jean Piaget further explored the links between risk-taking behaviours, human nature and accidents. It wasn't until 1978 that the words 'safety' and 'behaviour' were truly connected when the fascinating study by Judith Komaki and Ken Barwick presented the results of perhaps the very first formal attempt to influence workers' behaviour around safety.

Back to the future

The 1990s was the decade that 'behavioural safety' was born, with several American writers, including Scott Geller and Dan Petersen, articulating their views on why people behave as they do with regard to safety at work. Concurrently, on the other side of the pond at the University of Manchester, a young research team, including Dominic Cooper and Tim Marsh were realising their own hypotheses.

For both cohorts, the key question to answer was 'what actually is behaviour-based safety (BBS)?' Answers pointed towards the 'psychology of safety' and how to identify the motivation for individual risk-taking and then making adjustments to the working environment in order to regulate these behaviours.

As the new millennium dawned, 'behaviour' was increasingly viewed as a solution to help organisations progress in safety. Having systematically implemented engineering controls – such as machinery guarding – and administrative measures, including training and supervision, many organisations found themselves on a performance plateau and keen to revitalise their situation. Dekker, Reason, Slovic, Hollnagel and Rasmussen weighed in, each adding new perspectives and breaking boundaries.

The science of behaviour has undoubtedly evolved over the last century to a point where BBS has become a core element for many companies today. Forward-thinking organisations are beginning to conduct their own semi-scientific explorations of how they effectively influence the behaviour of their workers.

What, therefore, comes after behaviour-based safety? The answer, I believe, is a more holistic strategy, covering all elements of safety culture and considering the psychological triumvirate of cognition, affect and behaviour (or in other words, how people think, feel and behave). We'll explore these in the next article, which will appear on SHP Online. ∎

Andrew Sharman is chief executive of RyderMarshSharman – see page 4 for more details

References

● Komaki, J. Barwick, K. and Scott, L. 1978. A Behavioural Approach to Occupational Safety: Pinpointing and Reinforcing Safe Performance in a Food Manufacturing Plant. *Journal of Applied Psychology*, 63, 4, 434-445.
● Marsh, T. 2013. *Total Safety Culture*. Maverick Eagle Press.
● Piaget, J. 1977. *Understanding Causality*. London: W.W. Norton.
● Skinner, B.F. 1953. *Science and Human Behaviour*, New York: Macmilan.
● Slovic, P. 2000. *The Perception of Risk*. London: Earthscan.
● Watson, J.B. 1913. Psychology as the Behaviourist views it. *Psychological Review*, 20, 158-177.