

Every day we make quick decisions based on little information, leading to both good and bad consequences. **Andrew Sharman** examines heuristic thinking and its significance in the world of safety.



UNCONSCIOUS THINKING

Back in 1974, a seminal year of health and safety, Daniel Kahneman and his partner Amos Tversky made a groundbreaking discovery while researching why humans struggle to think statistically. They identified that the human brain was capable of taking mental shortcuts to solve problems or issues that we are faced with.

A 'heuristic', to give them their proper name, is by Kahneman's definition: "A simple procedure that helps find adequate, though often imperfect, answers to difficult questions."

Heuristics are the little 'rules of thumb' that allow us to quickly process and conclude an efficient decision without having to pore over information or deliberate what our course of action should be.

Kahneman and Tversky suggested that there are three main types of heuristics:

Availability heuristics help us to estimate the probability and likelihood of something happening based on information we can recall. Studies suggest that those events we can bring to mind quickly and easily are those that have occurred most recently. For example, if the news reports several road accidents on a certain stretch of highway, then we may believe that it is more likely to suffer a crash on that particular road and avoid that route for the near future.

Anchoring heuristics are based on the idea that we often take decisions related to specific reference points within our memory. These reference points act as

anchors to connect historical information to the present. For example, if a manager was involved with a serious fall from height incident earlier in her career, future discussion on this topic will often trigger her thought process to pull against this anchor in her mind. This may result in either a raised level of awareness and knowledge, or conversely, perhaps a degree of over-sensitivity and a reluctance to engage.

Representativeness heuristics help us to predict the probability of something happening based on the proportion of relevant items in play. For example, if I take a jar of coloured candies, some red, some blue and ask you to tell me which colour of candy will be drawn next from the jar, you would no doubt want to know how many of each colour I had placed in the container. When I tell you that 75 per cent of the candies were red, you would likely guess that red would be the colour of the next one to be drawn. This proportion is known as the *base rate*.

The *representativeness heuristic* is significant in our world of safety. Where a base rate appears to be in our favour we can be lulled into a false sense of security – for example, when we experience a period of time without an accident at work. Our confidence begins to grow and it becomes easy to believe that we have the ability to predict random events (accidents, or blue and red candies) from the *base rate* data to hand (our chart of historical rates or the data I gave you on sweets in the jar).

By their very nature, heuristics are used without our conscious thinking. As Kahneman says, they are a "consequence of the mental shotgun, the imprecise control we have over targeting our responses" to the questions or issues we face.

On one side, they make it easy for us to respond quickly to difficult situations, avoiding the need for long, deep thought. But heuristics have a flipside. They may lie behind the unconscious errors that we create as we go about our daily business and lead us into taking decisions and setting targets rather naively. ■

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