Commentary: Can we avoid bias?

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The cognitive processes we use in making diagnoses are characterised by heuristics and biases that are similar to those that underpin much human decision making.¹ Although these processes are error prone, they have evolved as rapid and effective ways of making decisions in conditions of uncertainty and they are deeply ingrained in our psyche. Reducing such errors may be difficult and, indeed, some commentators are sceptical about whether such cognitive errors can be reduced at all.

Nevertheless, some strategies have been proposed to deal directly with cognitive errors, and these merit more consideration and field testing.² These strategies involve what is sometimes referred to as debiasing. At the most basic level, just being aware of how our cognitive processes work and the kinds of pitfalls to which we are prone should, in theory, improve our decision making. This is a form of meta-cognition (or thinking about thinking) that has been advocated as an antidote to cognitive biases. Other tools such as algorithms, guidelines, and computer assisted diagnostic systems are also sometimes advocated as debiasing strategies, although these may supplant, support, and augment our cognitive processes rather than improve them.³

More direct intrusion into our typical thinking patterns is implied in the technique of cognitive forcing strategies.⁴ An example of these would be a requirement to always force yourself to consider a second diagnosis even when there seems to be an incontrovertible case for your initial diagnosis or to always think, once a diagnosis has been arrived at, "Could it be anything else?" Recognising that diagnosis is fundamentally based on the application of Bayesian probability theory, others have urged training of doctors in Bayesian analysis or providing computer equipment that can do the Bayesian analysis for the doctor in real time to provide more accurate estimates of diagnostic probabilities. Some decision making experts have little confidence in the ability of doctors

to overcome their cognitive biases and urge, instead, the installation of safety systems and checking mechanisms which will either prevent cognitive errors or pick them up and correct them.

Minimising error

The potential of insights from cognitive psychology to improve the diagnostic abilities of doctors is hotly contested, and few of the techniques suggested have much empirical evidence supporting their use. It is also argued that most clinical decisions made by experienced clinicians do not result from the kind of cognitive processes in which errors such as confirmatory bias occur but happen by a much more rapid process akin to pattern recognition.⁵ Nevertheless, the kind of cognitive processes that use decision making heuristics and are prone to the kinds of biases described by Klein¹ are still used by clinicians when making difficult decisions and extensively by novices. Some attempt at metacognition is probably worth while, and receiving feedback on and reflecting on past errors are also likely to improve future decision making. At the bedside, asking yourself whether your initial diagnosis is the only possibility or whether there could be something you are missing is a cognitive forcing strategy that is not too time consuming or taxing and yet could yield benefits.

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A memorable patient

When laughing is scarce

Many practices contain one or two safebreakers, known or incognito. At our practice, however, we had a genuine safe salesman, who had spent his working life in a quiet advisory capacity defending individuals and firms against the assaults of crime. He was a gentle, thoughtful man with a twinkle in his eye and for many years had been session clerk to a large local church. He was still driving in his 80s when his smile became less generalised, his gait became more hesitant, and his hands developed a tremor. Over the following months, his ability to walk became restricted, but he could still drive his car.

Each year his car insurance company requested a medical certificate, and I approached the day and the house with trepidation. I decided that, using a ruler graduated in seconds, I would use his reaction time as a benchmark as to when driving would become unsafe. His parkinsonism steadily advanced, and for two years he passed his test with manifestly greater difficulty.

There was a sense of tension on the day of his final test. He was seated on a hard chair with his forearm resting on the table, and his hand in mid-pronation awaited the ruler being dropped and, I feared, hitting the floor. I released the ruler. To my complete disbelief his reaction time was exceptionally short. I repeated the test. Unbelievable. I tested his left hand, with a similar but less dramatic result. "You've been practising, you old rogue," I said at last.

"Oh, yes," he responded, "but that has little to do with it. I admit I am quite unfit to drive. My reaction time is way down. It's poor technique on your part. All I did was to watch your eyes and not the ruler." He leant back in his chair and really laughed. And I laughed with him.

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