

YOUR CHEATING BRAIN



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You only see what your mind wants you to see:



TAKE a look around you. Whatever you see -- be it an office, **your** living room, a crowded train carriage -- you might well think you're getting the whole picture. Yet the mind has a strange way of filtering the information hitting **your** retina, hiding even what's in plain sight.

The most shocking events can easily pass under **your** mental radar without you as much as raising an eyebrow. But just because you don't see them doesn't mean they don't affect **your** behaviour. These small unnoticed cues can direct **your** future actions and set you on a course you have no idea you are taking. So why did our mind evolve like this, and should we be worried about all those details that we're missing?

Recognition of the mind's "blinkers" first emerged from a classic experiment in the 1970s. Volunteers were asked to watch a video of people passing a basketball and to count the number of passes. While they were busy tallying up, a surprising number failed to see a person walk into the middle of the court -- dressed as a gorilla.

It sounds unlikely, but the experiment has been repeated many times. How can we possibly miss a hairy ape right under our noses? In fact, this phenomenon, dubbed inattention blindness, is crucial for our survival. Because our senses are continually bombarded with information, our **brains** have developed a mental framework to help us home in on the sights, sounds and other stimuli that it deems most important.

"If we didn't have those conceptual frameworks, we'd be trying to process so much information we'd never be able to cope," says George Slavich, a psychologist at the University of California, Los Angeles. So, we have evolved to direct our attention in the most efficient way possible -- but there's a trade-off. "When things happen that are relatively rare, we often tend not to notice them," he says.

In some cases, inattention blindness can have much more serious consequences than missing a gorilla in our midst. In one study last year, 83 per cent of surgeons instructed to check X-rays for lung nodules failed to notice an image of a gorilla embedded in the scan (*Psychological Science*, vol 24, p 1848). If gorillas go unseen, what unexpected medical signs are doctors missing?

Intriguingly, some of those neglected bits of information still shape our behaviour. This effect is known as priming. The idea has come under heavy fire after attempts to replicate several key findings ended in disaster. Priming may not be straightforward, but that does not mean it doesn't exist, as one recent study rather amusingly showed. Stéphane Doyen from the Free University of Brussels, Belgium, and his colleagues set out to test the results of a classic study by John Bargh, which had shown that people exposed to words associated with old age, like "bingo", "lonely" and "grey", tended to walk more slowly. Doyen's automatic, computerised recordings failed to spot any difference in walking speed, however -- a find that would seem to question the entire idea of priming. Yet Doyen then revealed that something more subtle may have been going on in Bargh's study, if you instead look at the expectations of the experimenters, and not the subjects. This time, the experiments were led by students who either did or didn't know the priming effect; when they did know about it, the subjects exposed to the "old" words actually slowed down. For this reason, Doyen concludes that the experimenters themselves were being primed by their own expectations that the participants would move slowly. Those expectations may have then caused them to give off subtle cues in their own body language and speech, which somehow inspired slower behaviours in the subjects.

****** Kirsten grew up collecting water beetles, playing with snakes and slogging through swamps in southern Michigan. She has an undergraduate degree in biology from Kalamazoo College and then went on to earn her Master's Degree in journalism from NYU. Her work is now featured in publications such as *Discover*, *New Scientist*, *Popular Science*, and *Psychology Today*.