

MORE FROM LUCK...

Tell it to the Judge Why you really didn't see the speed limit sign

You're cruising down an unfamiliar road at a good clip watching for your next turn. Along the roadside you see billboards advertising hotels, shopping, restaurants, museums. You finally see the sign saying your exit is two miles ahead. Unfortunately, you've missed the speed limit sign posted nearby that tells drivers that the new speed limit is 45. Soon the state trooper is behind you flashing his lights and waving you over to the shoulder.

It may not get you out of the ticket and the fine, but Steven J. Luck, professor of psychology at the University of Iowa has documented for the first time that the human mind can not record more than a few visual objects at the same time, even if they're very simple. Therefore, the driver could not have been expected to see the speed limit change immediately following the exit sign.

Luck says that visual working memory—information you see and store in your memory only for a few seconds—is limited to storing four objects at once. However, he says, the memory can record several features of those four objects including color, size, and orientation. This means it is possible to retain a good deal of information about a limited number of objects. While the speeding driver could remember the color, shape, and size of each sign he saw, the fifth sign—the all-important speed limit was not processed.

Visual Working Memory versus Verbal Working Memory

It is well known that verbal working memory—information you can store in verbal form for a few seconds—is capable of holding about seven pieces of information. That's why it is possible to retain a telephone number by repeating it to yourself for the few seconds between looking it up in the telephone book and dialing the numbers.

Earlier research had also shown that people could retain more verbal information by combining individual items into larger "chunks." Similarly, Luck's experiments showed that people could combine the separate features of an object into a single chunk, allowing them to retain as many as 16 features divided over four objects. But they could not retain visual memories of 16 separate objects—in that case, they were limited to only four.

Source: University of Iowa (mary-geraghty@uiowa.edu)
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