

To this man, numbers look like scrambled “spaghetti” but his brain works fine. What’s going on?

RFS is the first patient with an inability to see numbers. “He sees something ... a scramble of lines and he calls it spaghetti,” [said Michael McCloskey, a professor of cognitive science at Johns Hopkins University].. RFS knows that what he’s seeing is a number — though he doesn’t know which number — just because he doesn’t see this series of nonsense lines for anything else.

And he can’t memorize the different orientations of lines and assign a number to them, because they change every time he looks away and looks back, McCloskey said. “What is most striking though is that it affects the numbers and not other symbols,” he told Live Science. Symbols or letters may look similar to numbers; a capital B, for example, looks like an 8. But he has no problem seeing letters or other characters.

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[R]esearchers conducted a word test in which they had RFS press a button every time he saw a particular word, such as “tuba.” When the researchers embedded that word in a number, he didn’t see the word and wouldn’t press the button.

Yet his brain activity was the same regardless of whether the target word was alone or inside of a digit. That suggests that his brain does all of the complex processing and knows he’s viewing the word and what word it is — but that knowledge never comes up in his awareness, [researcher David] Rothlein said.

So it seems “you can do an awful lot of work in the brain to know what it is you’re looking at without any awareness resulting from that,” McCloskey said.

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Credit: Johns Hopkins University

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