

When My Eyes Serve My Stomach

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Our senses aren't just delivering a strict view of what's going on in the world; they're affected by what's going on in our heads. A new study finds that hungry people see food-related words more clearly than people who've just eaten. The study, published in [*Psychological Science*](#), a journal of the [Association for Psychological Science](#), finds that this change in vision happens at the earliest, perceptual stages, before higher parts of the brain have a chance to change the messages coming from the eyes.

Psychologists have known for decades that what's going on inside our head affects our senses. For example, poorer children think coins are larger than they are, and hungry people think pictures of food are brighter. Rémi Radel of University of Nice Sophia-Antipolis, France, wanted to investigate how this happens—whether it's right away, as the brain receives signals from the eyes, or a little later, as the brain's higher-level thinking processes get involved.

Radel recruited 42 students with a normal body mass index. On the day of his or her test, each student was told to arrive at the lab at noon after three or four hours of not eating. Then they were told there was a delay. Some were told to come back in 10 minutes; others were given an hour to get lunch first. So half the students were hungry when they did the experiment and the other half had just eaten.

For the experiment, the participant looked at a computer screen. One by one, 80 words flashed on the screen for about $1/300^{\text{th}}$ of a second each, at a size that was just at the threshold of what that person could consciously perceive. A quarter of the words were food-related. After each word, the person was asked how bright the word was and asked to choose which of two words they'd seen—a food-related word like *gateau* (cake) or a neutral word like *bateau* (boat). Each word appeared too briefly for the participant to really read it.

Hungry people saw the food-related words as brighter and were better at identifying food-related words. Because the word appeared too quickly for them to be reliably seen, this means that the difference is in perception, Radel says—it's not because of some kind of processing happening in the brain after you've already figured out what you're looking at.

“This is something great to me, that humans can really perceive what they need or what they strive for, to know that our brain can really be at the disposal of our motives and needs,” Radel says. “There is something inside us that selects information in the world to make life easier.”