

Sunday Review

# Is That Jesus in Your Toast?

Gray Matter

By ANA GANTMAN and JAY VAN BAVEL APRIL 4, 2014

TAKE a close look at your breakfast. Is that Jesus staring out at you from your toast?

Such apparitions can be as lucrative as they are seemingly miraculous. In 2004, a Florida woman named Diane Duyser sold a decade-old grilled cheese sandwich that bore a striking resemblance to the Virgin Mary. She got \$28,000 for it on eBay.

The psychological phenomenon of seeing something significant in an ambiguous stimulus is called pareidolia. Virgin Mary grilled cheese sandwiches and other pareidolia remind us that almost any object is open to multiple interpretations. Less understood, however, is what drives some interpretations over others.

In a forthcoming paper in the journal *Cognition*, we hope to shed some light on that question. In a series of experiments, we examined whether awareness of perceptually ambiguous stimuli was enhanced by the presence of moral content.

We quickly flashed strings of letters on a computer screen and asked participants to indicate whether they believed each string formed a word or



not. To ensure that the letter strings were perceptually ambiguous, we flashed them between approximately 40 and 70 milliseconds. (When they were presented for too long, people easily saw all the letter strings and demonstrated close to 100 percent accuracy. When they were presented too quickly, people were unable to see the words and performed “at chance,” around 50 percent accuracy.)

Some of the strings of letters we flashed were words, others were not. Importantly, some of the words we flashed had moral content (*virtue*, *steal*, *God*) and others did not (*virtual*, *steel*, *pet*).

Over the course of three experiments, we found that participants correctly identified strings of letters as words more often when they formed moral words (69 percent accuracy) than when they formed nonmoral words (65 percent accuracy). This suggested that moral content gave a “boost” to perceptually ambiguous stimuli — a shortcut to conscious awareness. We call this phenomenon the “moral pop-out effect.”

This phenomenon is similar to one that you may experience every day. Think about how you experience food when you are hungry compared to when you are full. When you are hungry, food seems to “pop out” and capture your attention — as with the tempting aroma of the nut carts around New York City. But when you’re full, food doesn’t register as strongly and temptation doesn’t emerge. In fact, previous work by the researchers Rémi Radel and Corentin Clément-Guillotin has shown that food-related words are easier to recognize when one is hungry than when one is satiated.

In the moral domain, such “hunger” may take the form of a desire to redress injustice. According to the social psychologist Melvin J. Lerner, people have a fundamental need to believe that they live in a fair and orderly environment, in which good things happen to good people and bad things happen to bad people. When people are faced with unjust outcomes happening to others they often take steps to compensate the victims — or even to attribute



blame to them for the harm they experienced. This helps satiate their “moral hunger.”

To see if the moral pop-out effect was indeed related to moral hunger, we conducted several follow-up experiments (yet to be published). In one, we randomly assigned people to read a fictitious newspaper article indicating that a heinous crime had been committed and that the murderer was either at large (the “unjust world” condition) or had been arrested and held without bail (the “just world” condition). People who read about a murderer who was still at large showed even greater accuracy in moral-word recognition (79 percent accuracy) than people who read that the murderer had been brought to justice (71 percent accuracy). Moral hunger seemed to lead to a greater moral pop-out effect, in the same way that literal hunger enhances recognition of food-related words.

Pareidolia are often accompanied by reports that the apparition was welcomed as a sign of hope for an individual or family suffering through a tough time. For example, Jesus has appeared in Marmite to a woman worried about her ill mother, and in a potato chip to a woman concerned about her husband’s health. Our finding that moral concerns can alter a person’s perceptual experience may help explain why these apparitions seem to appear when they do.

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