How nonsense sharpens the intellect

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In addition to assorted bad breaks and pleasant surprises, opportunities and insults, life serves up the occasional pink unicorn. The three-dollar bill; the nun with a beard; the sentence, to borrow from the Lewis Carroll poem, that gyres and gimbles in the wabe.

An experience, in short, that violates all logic and expectation. The philosopher Soren Kierkegaard wrote that such anomalies produced a profound “sensation of the absurd,” and he wasn’t the only one who took them seriously. Freud, in an essay called “The Uncanny,” traced the sensation to a fear of death, of castration or of “something that ought to have remained hidden but has come to light.”

At best, the feeling is disorienting. At worst, it’s creepy.

Now a study suggests that, paradoxically, this same sensation may prime the brain to sense patterns it would otherwise miss — in mathematical equations, in language, in the world at large.

“We’re so motivated to get rid of that feeling that we look for meaning and coherence elsewhere,” said Travis Proulx, a postdoctoral researcher at the University of California, Santa Barbara, and lead author of the paper appearing in the journal Psychological Science. “We channel the feeling into some other project, and it appears to improve some kinds of learning.”

Researchers have long known that people cling to their personal biases more tightly when feeling threatened. After thinking about their own inevitable death, they become more patriotic, more religious and less tolerant of outsiders, studies find. When insulted, they profess more loyalty to friends — and when told they’ve done poorly on a trivia test, they even identify more strongly with their school’s winning teams.

In a series of new papers, Dr. Proulx and Steven J. Heine, a professor of psychology at the University of British Columbia, argue that these findings are variations on the same process: maintaining meaning, or coherence. The brain evolved to predict, and it does so by identifying patterns.

When those patterns break down — as when a hiker stumbles across an easy chair sitting deep in the woods, as if dropped from the sky — the brain gropes for something, anything that makes sense. It may retreat to a familiar ritual, like checking equipment. But it may also turn its attention outward, the researchers argue, and notice, say, a pattern in animal tracks that was previously hidden. The urge to find a coherent pattern makes it more likely that the brain will find one.

“There’s more research to be done on the theory,” said Michael Inzlicht, an assistant professor of psychology at the University of Toronto, because it may be that nervousness, not a search for meaning, leads to heightened vigilance. But he added that the new theory was “plausible, and it certainly affirms my own meaning system; I think they’re onto something.”

In the most recent paper, published last month, Dr. Proulx and Dr. Heine described having 20 college students read an absurd short story based on “The Country Doctor,” by Franz Kafka. The doctor of the title has to make a house call on a boy with a terrible toothache. He makes the journey and finds that the boy has no teeth at all. The horses who have pulled his carriage begin to act up; the boy’s family becomes annoyed; then the doctor discovers the boy has teeth after all. And so on. The story is urgent, vivid and nonsensical — Kafkaesque.

After the story, the students studied a series of 45 strings of 6 to 9 letters, like “X, M, X, R, T, V.” They later took a test on the letter strings, choosing those they thought they had seen before from a list of 60 such strings. In fact the letters were related, in a very subtle way, with some more likely to appear before or after others.

The test is a standard measure of what researchers call implicit learning: knowledge gained without awareness. The students had no idea what patterns their brain was sensing or how well they were performing.

But perform they did. They chose about 30 percent more of the letter strings, and were almost twice as accurate in their choices, than a comparison group of 20 students who had read a different short story, a coherent one.

“The fact that the group who read the absurd story identified more letter strings suggests that they were more motivated to look for patterns than the others,” Dr. Heine said. “And the fact that they were more accurate means, we think, that they’re forming new patterns they wouldn’t be able to form otherwise.”

Brain-imaging studies of people evaluating anomalies, or working out unsettling dilemmas, show that activity in an area called the anterior cingulate cortex spikes significantly. The more activation is recorded, the greater the motivation or ability to seek and correct errors in the real world, a recent study suggests. “The idea that we may be able to increase that motivation,” said Dr. Inzlicht, a co-author, “is very much worth investigating.”

Researchers familiar with the new work say it would be premature to incorporate film shorts by David Lynch, say, or compositions by John Cage into school curriculums. For one thing, no one knows whether exposure to the absurd can help people with explicit learning, like memorizing French. For another, studies have found that people in the grip of the uncanny tend to see patterns where none exist — becoming more prone to conspiracy theories, for example. The urge for order satisfies itself, it seems, regardless of the quality of the evidence.

Still, the new research supports what many experimental artists, habitual travelers and other novel seekers have always insisted: at least some of the time, disorientation begets creative thinking.

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