

Survival's Ick Factor

By JAMES GORMAN
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Disgust is the Cinderella of emotions. While fear, sadness and anger, its nasty, flashy sisters, have drawn the rapt attention of [psychologists](#), poor disgust has been hidden away in a corner, left to muck around in the ashes.

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Ron Barrett

No longer. Disgust is having its moment in the light as researchers find that it does more than cause that sick feeling in the stomach. It protects human beings from disease and parasites, and affects almost every aspect of human relations, from romance to politics.

In several new books and a steady stream of research papers, scientists are exploring the evolution of disgust and its role in attitudes toward food, sexuality and other people.

Paul Rozin, a psychologist who is an emeritus professor at the University of Pennsylvania and a pioneer of modern disgust research, began researching it with a few collaborators in the 1980s, when disgust was far from the mainstream.

"It was always the other emotion," he said. "Now it's hot."

It still won't wear glass slippers, which may be just as well, given the stuff it has to walk through. Nonetheless, its reach takes disgust beyond the realms of rot and excrement.

Speaking last week from a conference on disgust in Germany, Valerie Curtis, a self-described "disgustologist" from the [London School of Hygiene and Tropical Medicine](#), described her favorite emotion as "incredibly important."

She continued: "It's in our everyday life. It determines our hygiene behaviors. It determines how close we get to people. It determines who we're going to kiss, who we're going to mate with, who we're going to sit next to. It determines the people that we shun, and that is something that we do a lot of."

It begins early, she said: "Kids in the playground accuse other kids of having cooties. And it works, and people feel shame when disgust is turned on them."

Some studies have suggested that political conservatives are more prone to disgust than liberals are. And it is clear

that what people find disgusting they often find immoral, too.

It adds to the popularity of disgust as a subject of basic research that it is easier to elicit in an ethical manner than anger or fear. You don't have to insult someone or make anyone afraid for his or her life — a bad smell will do the trick. And disgust has been relatively easy to locate in the brain, where it frequents the insula, the amygdala and other regions.

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REVOLTING In India, the power of disgust to improve villagers' hygiene is being tested. Center of Gravity, a Bangalore agency working with Valerie Curtis, a disgust researcher, created skits including this role, Laddu Lingam; he makes treats of mud and worms and never washes his hands. Another character, Supermom, shows the proper behavior.

"It is becoming a model emotion," said Jonathan Haidt of the University of Virginia, a disgust pioneer with Dr. Rozin.

And the research may have practical benefits, including clues to obsessive compulsive disorder, some aspects of which — like excessive hand washing — look like disgust gone wild.

Conversely, some researchers are trying to inspire more disgust at dirt and germs to promote hand washing and improve public health. Dr. Curtis is involved in efforts in Africa, India and England to explore what she calls "the power of trying to gross people out." One slogan that appeared to be effective in England in getting people to wash their hands before leaving a bathroom was "Don't bring the toilet with you."

Disgust was not completely ignored in the past. Charles Darwin tackled the subject in "The Expression of the Emotions in Man and Animals." He described the face of disgust, documented by Guillaume-Benjamin Duchenne in his [classic study of facial expressions in 1862](#), as if one were expelling some horrible-tasting substance from the mouth.

"I never saw disgust more plainly expressed," Darwin wrote, "than on the face of one of my infants at five months, when, for the first time, some cold water, and again a month afterwards, when a piece of ripe cherry was put into his mouth."

His book did not contain an image of the infant, but fortunately YouTube has numerous videos of [babies tasting lemons](#).

Human beings are complex, of course, as evidenced by the behavior of parents who give their babies lemons and record their distress on video, and the lemon face is not exactly that of adult disgust.

It is, however, generally accepted that disgust evolved partly to avoid putting bad things in the mouth, an idea already put forth when Dr. Rozin tackled disgust. He and his colleagues developed the idea that disgust was then elaborated by cultural evolution to include other forms, one of them based in a dislike for reminders of the animal nature of humans. Sex, death, feces and bad food all smacked of animality.

There are many variations in how scientists now view disgust, but one new approach by evolutionary psychologists was captured in a December special issue of The Philosophical Transactions of the Royal Society B, "[Disease Avoidance: From Animals to Culture](#)," and in a conference on "[The Evolution of Disgust](#)" this month in Bielefeld, Germany, where many of the same scientists appeared.

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This article has been revised to reflect the following correction:

Correction: January 23, 2012

An earlier version of this article misstated the name of the institution where Valerie Curtis works. It's the [London School of Hygiene and Tropical Medicine](#).

A version of this article appeared in print on January 24, 2012, on page D1 of the New York edition with the headline: Survival's Ick Factor.

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