

The ancestry of anorexia

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Blame biology, not parenting, new theory suggests

By Ellen Ruppel Shell, Globe Correspondent, 12/30/2003

Anorexia, the most lethal of psychiatric disorders, afflicts as many as 1 percent of young women and about a tenth as many men, and casts a Svengalian spell, leading its victims to willingly starve themselves in the midst of plenty. Now, psychologist Shan Guisinger has developed a radical new view of anorexia that she says explains both the bizarre features of the illness -- self starvation and hyperactivity -- and its resistance to treatment by traditional psychotherapy.

Anorexia, she contends, is not primarily a psychological condition brought on by a troubled childhood -- as is often thought -- but a disorder based in biology, specifically in the appetite regulation mechanism in the brain. Her theory postulates that anorexics have a biological adaptation to weight loss that causes their bodies to shut off hunger signals, and to ratchet up physical activity, even as their flesh melts away.

"Anorexics are often told to stop dieting, to listen to their body and to give it what it wants," Guisinger said. "But the reality is that they are listening to their bodies, and their bodies are telling them not to eat. The truth is, they have to stop listening."

Guisinger, who has treated eating disorders in private practice in Missoula, Mont., for nearly two decades, trained in evolutionary biology in the late 1970's before getting a doctorate in clinical psychology at the University of California at Berkeley. This background, coupled with her upbringing on a farm in Washington state, convinced her that Freudian and other purely psychological explanations for anorexia were inadequate.

"We sometimes forget that humans are animals first," she said, describing her theory, which she published this fall in the prestigious *Journal of Psychological Review*. "And a number of animals are able to turn off hunger when they have something better to do." Gray whales, for example, won't eat while they're migrating, even if food is plentiful. Laboratory rats starved down to 70 percent of their body weight stop eating and become hyperactive, spinning up to 12 miles a day on their tiny exercise wheels.

Guisinger's "Adapted to Flee Hypothesis" traces the roots of human anorexia back more than 11,000 years to the late Pleistocene era, when nomadic foragers migrated around the globe. At that time, the biological capacity to suppress hunger and move quickly and tirelessly in search of food may have offered an adaptive advantage, just as it appears to offer an advantage to migrating animals.

"Today, genetically susceptible people who lose a good deal of weight may trigger this archaic adaptation," she said. "And that's what underlies their illness."

Critics scoff that a potentially fatal disorder that suppresses fertility in women is hardly "adaptive." But Guisinger does not argue that anorexia per se helps an individual survive and reproduce in the modern world. Rather she says that anorexics suffer from a toxic distortion of the innate mechanisms that kept our ancient ancestors alive.

Daniel le Grange, director of an eating disorders program at the University of Chicago says Guisinger's idea has "a ring of truth about it, because those who survived [in ancient times] must have had a gene to allow them to starve well." Indeed, the very intractability of anorexia suggests that it had some adaptive function in human evolution: Being wired into the brain through eons of history, it is far less likely than learned behaviors to respond favorably to traditional psychotherapy.

Walter Kaye, a psychiatrist and professor of psychiatry at the University of Pittsburgh says the physiological component of the illness is extremely powerful.

"Anorexia is a very homogeneous disorder," he said. "People who have it have about the same symptoms. They also

tend to say the same things, act the same way. When you see that kind of pattern, it says biological."

Numerous scientific studies show that weight loss from any cause -- be it dieting, depression, or even surgery or physical illness -- can initiate the anorexic cycle in the genetically inclined. Nearly half its victims struggle with the disease throughout their lives.

Cynthia Bulik, a professor of psychiatry at the University of North Carolina at Chapel Hill who has studied anorexia since the mid-1980s, said that while important, psychological treatments for the disorder fail if they don't first address the physiological aspects. She points out that anorexics, like all starving people, tend to be unreliable witnesses of their own experience.

"You can't do deep psychotherapy with someone whose brain is not working," she said.

Anorexics have chronically high levels of cholecystokinin, serotonin, and dopamine, chemicals that signal satiety in the brain. They also have low levels of appetite promoters, such as galanin and norepinephrine. Hence their brains are chronically lying about the body's need for food, or at best passing on a distorted view.

The National Institutes of Health is sponsoring a study to uncover the genetic variance underlying this neurochemical deception. The goal is both to predict who among us has the potential to become anorexic, and to sort out subsets of anorexics who may respond to various treatments.

Bernard Devlin, a statistical geneticist and professor of psychiatry at the University of Pittsburgh is, along with Kaye, one of the principal investigators in the NIH study. Part of his effort involves looking for the genes that make anorexics vulnerable to environmental triggers. "We have found some genomic regions that we believe are associated with behaviors that predict anorexia, and we're hoping to eventually narrow it down to specific genes, or combinations of genes," Devlin said.

Such insights offer support for a family-centered approach to treating adolescent anorexia that enlists parents to help make eating non-negotiable, as they would taking life-saving medicine. It's a time-consuming method, but one that can help break the cycle of blame, guilt, denial, and self loathing underlying the illness and contributing to its lethality.

Psychologist le Grange, who first encountered this family-based therapy at the Maudsley Hospital in London over a decade ago, says that a recent study concluded that most patients treated with this approach regained health, and remained healthy five years after treatment. Feeding the disease, le Grange said, often reveals that family psychopathology is a symptom rather than a cause of the disorder.

Guisinger is an enthusiastic supporter of the Maudsley approach, which her theory rationalizes, and she is hopeful that a wider acceptance of her theory will lead to other effective treatments, as well as encourage patients and their families to seek professional help early, when it is most likely to be effective.

"Understanding the symptoms of anorexia as an archaic biological adaptation can free psychotherapists, physicians, and parents from unjustified blaming," she said. "And that in itself is a big step toward curbing this devastating disease."

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