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## Viewing Depression As Tool for Survival

By ERICA GOODE

The case, Dr. Randolph M. Nesse said, does not fit tidily with the view that depression is only a matter of disordered brain chemicals:

A woman sought help from a psychiatric clinic because she was desperately depressed. She had dedicated five years to becoming a professional musician, despite her teachers' admonitions that she lacked the talent to succeed. She persisted, the woman said, because it was her mother's dream for her.

The psychiatrists at the clinic treated her with a variety of antidepressant medications and with psychotherapy. Nothing helped. But when, one day, the woman reached a decision, giving up music in favor of a career more suited to her abilities, her depression lifted.

Dr. Nesse, director of the Evolution and Human Adaptation program at the University of Michigan's Institute for Social Research, has collected many such cases (he alters altering details to protect patients' identities) because he believes they offer clues to a deeper understanding of depression.

In a recent article in the journal Archives of General Psychiatry, Dr. Nesse argued that while some forms of depression were clearly a result of genetic vulnerability and brain abnormality, others might have their roots in evolutionary history.

Darwinian theory holds that evolution selects for fitness: organisms with traits that promote survival or reproduction pass on their genes; organisms without such traits die off.

Depression may have developed, Dr. Nesse suggested, as a useful response to situations in which a desired goal is unattainable, or, as he has put it, "when one of life's paths peters out into the woods."

Locked in pursuit of the impossible, it makes sense for an animal to hunker down, take stock and figure out what to do next, Dr. Nesse said. In some cases, depression may help a person disengage from what has proved a hopeless effort; in other cases, it may protect the person from jumping ship too rashly, perhaps landing in even less hospitable seas.

"If I had to put my position in a nutshell," he said, "I'd say that mood exists to regulate investment strategies, so that we spend more time on things that work, and less time on things that don't."

In some respects, Dr. Nesse's conception echoes that of the psychoanalyst Dr. Emmy Gut. In a 1989 book "Productive and Unproductive Depression" (Basic Books), Dr. Gut described, among other cases, the experience of a biochemist, Albert, who frequently became depressed when a research strategy he was pursuing went nowhere. When the feelings of despair passed, he said, he saw "an entirely different way to tackle the problem, or else, I have recognized that the project was unrealistic."

In an interview, Dr. Gut, who lives in Sweden, said: "I think that depression is a normal mechanism. It's an attempt toward adaptation to a problem."

Dr. Nesse and Dr. Gut are not the first to ponder what evolutionary function depression -- and its close relative, sadness or low mood -- might serve. Thinkers from Schopenhauer to Freud have offered their views. Over the years, scientists have speculated variously that depression represents a plea for help, a strategy for manipulating others into providing resources, a signal of submission or yielding in conflict, or a way to conserve an organism's energy and resources in hard times. Other investigators see no point in viewing depression as anything other than a malfunction of brain chemicals.

Dr. Nesse, however, is one of a growing number of scientists who over the past decade have systematically tried to bring a Darwinian perspective to medicine, hoping to learn more about how evolution has shaped humans' vulnerability to disease.

The approach is yielding a richer understanding of illness, and in particular, is helping scientists distinguish between diseases and medical conditions that developed as defenses against other more serious threats to survival.

Coughing, for example, is not a disease in itself but is the body's attempt to rid itself of bacteria in the lungs. Diarrhea and vomiting, though unpleasant, also serve as defenses, evolving as ways to evade danger, and thus to preserve fitness. And the ability to feel pain is essential for an organism's survival. "People who are born without any capacity to feel pain are usually dead by early adulthood," Dr. Nesse said.

Similarly, emotions like anxiety, fear and depression can be viewed as defensive strategies. Such defenses make sense, Dr. Nesse noted, because they have a low cost, especially when compared with their potential for protection. Vomiting, for instance, involves only the loss of few hundred calories, but might save an animal's life if the substance ingested is poisonous. In the same way, being frightened and anxious when no threat exists is a small price to pay for the readiness to fight or flee when true danger looms. Yet these tactics also sometimes go awry, and illness results: chronic pain syndromes or panic attacks, for example.

Dr. Nesse believes the need to gain a deeper understanding of what purpose depression might serve is especially pressing at a time when the illness is so prevalent. Surveys indicate that 10 percent of Americans suffer from clinical depression; millions more endure a darkness that is not severe enough to earn a diagnosis but still interferes with their lives.

Researchers have also found that the rates of depression have increased in people born after World War II.

"The irony," Dr. Nesse said, "is that here we have finally created a society where not many people are hungry, we stay warm, we can take baths, we can travel and have relative freedom, and yet so many people are so miserable."

One thing that has changed over the eons is the increased pressure people feel to set ever larger goals. Ancestral hominids may have striven to pick enough berries to last for a week; modern humans want to look like supermodels, make a million dollars in the stock market or produce flawless children.

In shaping his ideas, Dr. Nesse has drawn upon the work of psychologists like Dr. Eric Klinger, at the University of Minnesota, who studies how people become committed to goals, and how they reach those goals or abandon them.

Dr. Klinger's studies indicate that depression plays a crucial role in the process of disengaging from a goal. To illustrate this, he uses the analogy of a soda machine. "You put your 75 cents into the machine and nothing happens," he said. "Then you go through a series of phases: your behavior gets more invigorated, you pay more attention to the signs, you pull on levers, you put in more change. If it still doesn't work you may start to rough up the machine. But at some point," he said, "you walk away, feeling down, feeling disappointed. It's a minor depression."

The fact that depression sets in after someone is prepared to suffer a failure or a loss, Dr. Klinger said, is important. "It slows you down, and makes you take your bearings," he said, "and at the same time it's very unpleasant, so that people are not going to be attracted to giving up quickly."

Dr. Nesse believes there are many varieties of depression, not all of them captured by official diagnostic categories. An evolutionary view, he and others hope, might encourage a broader, more nuanced search for treatments. For instance, if depression is a defense, it might not always make sense to block its defensive properties with medication. When drugs are used to treat chronic diarrhea caused by the shigella bacteria, he noted, complications often result.

"For my money," said Dr. Paul Gilbert, a psychologist at the University of Derby in England, who has written on depression and evolution, "the key thing really is recognition that the environment is key to many of these disorders. And if you really want to affect depression, it's nice to have therapies that work, and it's nice to have drugs that work. But do we really want a society where we drive everyone mad and then give them drugs to get them out of it?"

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