tant mothers hunger for salty snacks. At times, the need for salt has had social impact. In India in 1930, Mahatma Gandhi led a "salt march" to protest British-imposed taxes on the mineral. Denton speculates that sodium deprivation has had a role in cannibalism. In tropical areas where salt is scarce, such as Borneo, Indonesia, and the Amazon, tribesmen learned to savor the saltiness of their compatriots. An official probing native murders in New Guinea early in this century was told by a Papuan: "We eat [humans] because they are like fish."

Important to the functioning of the adrenal glands, salt helps people cope with stress, e.g., urban life. Scientists note that areas where salt is plentiful tend to be populous; salt-poor regions are sparsely inhabited.

Then why worry about salt? The trouble, notes Denton, is that, in salt-rich advanced societies, people consume too much of it. Salt saturation causes high blood pressure, which can lead to early heart attacks and strokes. In hunter-gatherer societies, the typical diet is 60 to 80 percent vegetarian, and includes only one to two grams of salt a day. But in the United States, the land of the hamburger and the potato chip, salt consumption can exceed 12 grams a day—"five to 10 times the amount required for normal growth and physical vigor."

Evolutionary Game Theory

"Spider Fights as a Test of Evolutionary Game Theory" by Susan E. Riechert, in *American Scientist* (Nov.-Dec. 1986), 345 Whitney Ave., New Haven, Conn. 06511.

In nature, the goal is survival: only the strong, and the wise, endure.

It was naturalist Charles Darwin who, in 1858, first proposed the theory of natural selection, which holds that animals compete for resources and territory and that the fittest of them win. Roughly a century went by before a similar notion was developed specifically for man. This was called "game theory." Cambridge mathematician John von Neumann and economist Oskar Morgenstern developed a model describing how people make decisions—or the way rational men try to win contests.

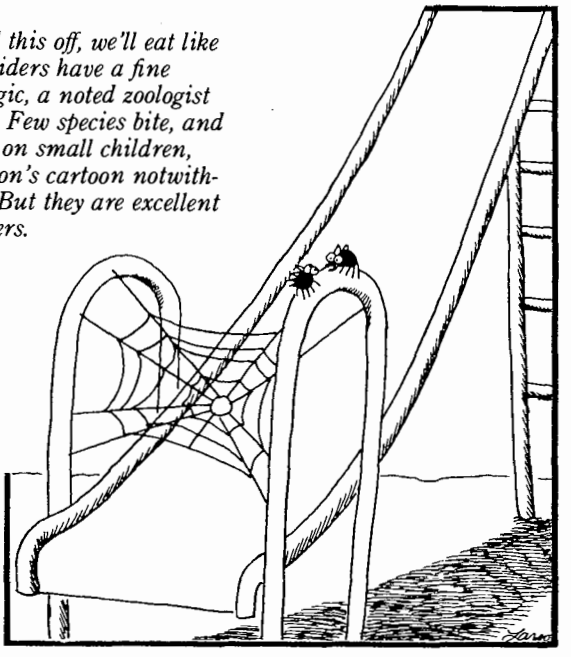
For years, natural selection and game theory formed the basis for most explanations of animal behavior. However, notes Riechert, a zoologist at the University of Tennessee, another step was yet to come, a synthesis of these two ideas: evolutionary game theory. In 1973, evolutionary biologist John Maynard Smith and economist G. R. Price proposed this as an explanation of the dynamics of the animal kingdom. In contrast to the widely held "ethological" view of animals—which casts nonhuman beings as mere actors in rituals—the Smith-Price theory sees all creatures, and species, as game players, acting to protect their own interests.

Riechert finds support for evolutionary game theory in spiders.

Spiders cannot *think*, but they do act logically when defending their territory. Riechert has studied *Agelenopsis aperta*, or grass spiders, members of the funnel-web family found in the West. Acting as trip-wires, their nets signal the approach of insects, which *A. aperta* devours.

Observing *A. aperta* in two habitats—a New Mexican desert and an Arizona woodland—Riechert found them good game players. In battles

"If we pull this off, we'll eat like kings." Spiders have a fine sense of logic, a noted zoologist has found. Few species bite, and none dine on small children, Gary Larson's cartoon notwithstanding. But they are excellent game players.



lasting from a few seconds to 21 hours, they use up to 28 fighting techniques (e.g., biting, shoving, dragging, tumbling) to protect their turf and conquer adversaries. Their strategies accord with man's logical model.

Riechert sees this as a partial confirmation of evolutionary game theory. Spiders are not unique, just easy to observe. If they play games well, she believes, so must harder-to-study creatures.

The Retrovirus

"The First Human Retrovirus" & "The AIDS Virus" by Robert C. Gallo, in *Scientific American* (Dec. 1986 & Jan. 1987), 415 Madison Ave., New York, N.Y. 10017.

Developments involving cancer and AIDS (Acquired Immune Deficiency Syndrome) are much in the news. What is not being reported, says Gallo, a National Cancer Institute physician, is that the two are linked.

The common element is called a retrovirus. Only one ten-thousandth of a millimeter long, wrapped in a double layer of fat, this grain of life is essentially made of proteins, two strands of RNA (ribonucleic acid), and an enzyme called reverse transcriptase.

Retroviruses are unique. They encode genetic information *not* in DNA (deoxyribonucleic acid)—the normal genetic storehouse—but in RNA, a similar but different molecule crucial to cell reproduction. Retroviruses penetrate cells, disrupt their genes, and either halt their growth, as with white blood cells in AIDS, or spark wild proliferation—that is, cancer.

That retroviruses can induce tumors in animals is well known: The