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COMPETITION -- PERSONAL BEST

Selfish Genes And Mellow Monkeys

Food and sex are what drive all animals, including humans, to compete. Even a retiree-turned-couch-potato can't lose the impulse

If you want to understand the urge to compete, consider the rat. Male wild rats fight each other as a matter of course. When an adult male so much as tries to enter territory already claimed by another, there is a battle royal. The losing rat dies soon after -- not from any wounds, which are usually superficial, but from sheer humiliation. Rats, in other words, are about as competitive as you can get.

Except when they don't have to be. Put a bunch of male rats in a cage with no females, give them plenty of food, and they get along like they're on some sort of male sensitivity retreat, grooming each other and curling up together.

Yes, it's true. The drive to compete, hardwired into every animal on earth -- the drive that underlies every sporting event, every startup, every campaign, every war -- is all about food and sex. We are just trying to stay alive long enough to pass on our genes, and if that means fighting to the death over some juicy morsel or juicy mate, so be it.

The drive to survive is the reason brains even exist. In every species the brain is located near the mouth. It's rather fitting, because the thinking organ evolved as a way to control movement, making it easier to go after food and to remember where the food is. Evolution was even clever enough to make eating fun. There are few things more satisfying than a full belly, so animals, including humans, want to fill it up over and over.

Ultimately, though, the reason living things are so desperate to find food is to ensure their survival. And that, in turn, is all about continuation of the species. Which brings us back to sex. James Brown had it right -- almost -- when he sang about being a *Prisoner of Love*. More precisely, we are prisoners of our genes' desire for love. These demanding bits of DNA have a competitive instinct unmatched by anything in the natural world, and they are competing for one thing only: that their hosts survive long enough to procreate and replicate the genes in other, equally survival-minded hosts. Oxford University professor Richard Dawkins' 1976 book summed it all up in the title: *The Selfish Gene*.

ALL ABOUT ME

How selfish is it? Consider the male marsupial mouse. Once it mates, it dies, in order to free up resources for the next generation. Or how about the male elephant seal: He is so busy from December through March fighting for fertile females that he barely eats, risking starvation. And it's not just males that have selfish genes. Females throughout nature will fight to the death to defend their young, unless they think those young are too weak to save, in which case they may kill them.

Human brains have evolved over millions of years to the point where we can overrule the baser instincts of our genes. We've figured out, for the most part, ways to survive with a minimum of discomfort and relatively few mortal battles. Still, we can't seem to lose the urge to compete. We are trapped in a "hedonic treadmill," as identified in 1975 by psychologists Philip Brickman and Donald T. Campbell. They realized that our brains do not recognize an absolute level of satisfaction. In other words, no matter how much we have, we want more.

Competition is so deep that even a retiree-turned-couch-potato cannot eradicate the instinct. "For most people, life is not that competitive, and yet we seek out competition anyway," says Charles P. Ewing, a professor of psychology at the State of University of New York at Buffalo. "Watching sports, playing cards -- everyone has some desire at some level to compete."

How strong that urge is -- what separates a Lance Armstrong or Michelle Wie from, well, you and me -- is determined by a stew of hormones, neurochemicals, and environmental factors that come together to spark a Pavlovian response to victory. When you do something the brain likes, such as winning, the brain's reward center is spritzed with a dose of dopamine, a feel-good brain chemical that prompts pleasurable emotions. "People who are extremely competitive get those spritzes every time they win, so they strive to win more and more," says Dr. James B. Brewer, a neuroscientist at the University of California at San Diego. Incidentally, the desire to continue competing is strongest if the victories are sporadic. "Winning every time doesn't shape behavior nearly as much as winning intermittently," says Brewer.

Few people do win all the time, of course, and for many the fear of losing brings on unpleasant feelings of anxiety and stress. It's a thin line between the thrill of victory and the agony of defeat, as the hypercompetitive ancient Greeks well knew: Their word for contest was *agon*, the root of the word "agony." Stress ramps up the nervous system, setting up the body to fight or take flight, and the brain is flooded with adrenaline. The ill effects of too much stress are well documented: It wears down the immune system, overburdens the heart, and can kill you. For the mellow among us, that's enough to make us pass the baton to the other guy without a second thought.

Then there are the "adrenaline junkies," people who feel more alive when they experience anxiety. What keeps these supercompetitors going? Part of it may be serotonin, a mood regulator that is more prevalent in the brains of aggressive people. Competitors also have higher-than-average levels of testosterone, the male hormone. Studies of both male and female athletes have found that testosterone rises in anticipation of a game, and the levels stay high for some time afterward in the winners. A recent study of amateur hockey players by Justin Carre, a researcher at Brock University in Ontario, found that levels of testosterone and cortisol, a stress hormone, were highest in team members during home games. That hormone surge may be sparked by the urge to defend one's territory, much as a dog defends its yard, suggests Carre.

All of this makes it sound as though some of us are genetically pre-ordained to be alphas, and the rest of us losers. But the environment has a huge role to play in this determination. Women have become much more competitive over the past 20 years as they have gained more opportunities in sports and business. Parenting is also a critical factor in how individuals turn out. Low self-esteem is one of the surest predictors of a poor competitor, and many psychologists believe poor parenting is the surest indicator that a child will have low esteem.

Besides, food and sex don't always have to be vied for in a zero-sum game. Our genes were clever enough to recognize that cooperation can be as effective a survival technique as selfishness. The altruistic impulse is particularly strong in humans, the most social of animals. "Even in the harshest competition, an intelligent organism must be a strategist, assessing whether its goals might best be served by retreat, conciliation, or living and letting live," writes Steven Pinker, a professor of psychology at Harvard University, in his book *How the Mind Works*. "Sometimes the genes' best strategy is to design organisms that cooperate."

MAKING LOVE, NOT...

In that case: Why war? In the long run it might seem to be a good way to win territory, mates, and food, but war is devastating to survival in the short term. Besides man, the only species that exhibit warlike behavior are chimpanzees and baboons, with tribes regularly attacking each other. But monkeys can change their "monkeyness" given some peaceful influences, as discovered by Stanford University biologist Robert M. Sapolsky. He wrote in the January issue of *Foreign Affairs* about two groups of savanna baboons he studied in the 1980s in Kenya. One group was getting fat and happy from the garbage they dined on daily from a nearby tourist lodge, but they were attacked nearly every morning by the most combative males from a forest-dwelling baboon group nearby.

It turns out the garbage was contaminated with tuberculosis bacteria. The disease soon killed off both the garbage-dump baboons and the forest baboon males that had been elbowing in on their spoils. As a result, the forest tribe was left with only the less-aggressive, friendly males, and double its previous female-to-male ratio. "The social

consequences were dramatic," writes Sapolsky.

Aggression in the forest tribe was far less frequent. There was more reciprocal grooming and hanging out, and females were less defensive now that there were more of them. But most surprising, outsider aggressor males that joined the tribe quickly adapted to this Elysian setting, becoming less aggressive and more social as well. Some 20 years later the tribe's unique social order remains in place, even though all the original laid-back males have died out. "The most plausible explanation is that this troop's special culture is not passed on actively but simply emerges, facilitated by the actions of the resident members," writes Sapolsky.

In other words, the resident males and females treat newcomers well, even if they are aggressors. As a result, the new males relax and adopt the behavior of the group. Perhaps culture can trump our genetic imperative to compete -- or at least get us to stop stealing each other's food.

By Catherine Arnst