Toxoplasmosis is a disease caused by infection with the parasite Toxoplasma gondii. This parasite can infect any mammal but prefers cats as its host. To become infected, one needs to either eat raw or undercooked meat from an infected animal, or be in contact with cells shed by a cat. This is the reason why doctors encourage pregnant women to stay away from kitty litter.

It is thought that this parasite, which is able to enter the central nervous system, has evolved to manipulate host behavior in order to enhance the likelihood of its own transmission. This ability is particularly useful in animals that fall prey to cats.

Normally, rats show a strong aversion to cats and their odors. However, when infected with the parasite, rats show higher levels of activity and a decrease in their innate fear of novelty which may make them more likely to become prey. Even more startling, infected rats display what is called a “fatal attraction” to cat odors where they actually seek out cats – making it extremely likely that they will fall victim to their predator and successfully transfer the parasite into a feline host.

While humans at the top of the food chain represent a dead-end for the parasite, it appears that toxoplasmosis, a mostly asymptomatic disease in healthy adults, has effects on human personality and behavior. While infected, men appear to be more suspicious, jealous and dogmatic while women display higher levels of warmth and are more outgoing. With infection rates varying across geographic regions, some researchers have speculated that parasites may contribute to what we know as cultural diversity. While that remains to be seen, it is clear that Toxoplasma gondii parasitites are capable, at least in rats, of creating behavior beyond belief.

Psychological Frontiers is produced by the Psychology Department at Minnesota State University, Mankato. I’m Dr. Dawn Albertson.