



What Would Happen If Computer Viruses Were Like Digital Peacocks?

August 30, 2012

[Lee Rannals](#) for redOrbit.com – Your Universe Online

Researchers from [Michigan State University](#) are creating digital peacocks to explore what would happen if [computer viruses](#) had to find mates in order to reproduce.

The team wrote in the journal [Evolution](#) about how they created a digital world called Avida to see how mate attraction played out through computer programs.

“This is actually a big question that still generates a lot of debate,” said Chris Chandler, MSU postdoctoral researcher at MSU’s [BEACON Center for the Study of Evolution in Action](#), who co-authored the study. “People have some good ideas, but they can be hard to test really well in nature, so we decided to take a different approach.”

Avida is a software environment in which specialized computer programs compete and reproduce. As mutations occur when Avidians copy themselves, digital organisms evolve.

The team programmed Avidians with the ability to grow sexual displays, similar to a peacock’s tail, and also allowing them the ability to choose mates at random.

As the researchers predicted, the Avidians tended to gravitate towards those mates with the showiest tails.

“One school of thought argues that the main benefit of choosing an attractive partner is that your offspring also will be sexy,” Ian Dworkin, assistant professor of zoology and co-author of the paper, said. “In the other camp are those who argue that these sexual ornaments are a sign of good health, and so choosing a showy mate ensures that you’ll get good genes to pass on to your offspring.”

Biologists believe ornamental displays help attract mates because it shows an individual’s virility, and only animals with good health can grow an attractive display of tail feathers.

The researchers altered Avidians’ genetic code to allow them to grow exaggerated displays for free, erasing the line of class within the virtual world.

The team expected this change to diminish the evolutionary benefits of preferring showy mates, because even Avidians of lower class could now grow enormous digital tail feathers.

“I was surprised when we didn’t find that at all,” Chandler said. “Even when we eliminated the costs of these displays, they still evolved to be an indicator of a male’s genetic quality.”