Hard Rock Makes Killer Mice, Teen Finds

MUSIC CAN BE HAZARDOUS TO MOUSE HEALTH

He may have won top regional and state science-fair honors, but probably at least some of his friends aren't talking to him. Sixteen-year-old David Merrill, a student at Nansemond River High School in Suffolk, Va., thought that the loud sounds of **hard-rock music** must have a bad effect on its devoted fans and came up with a way to test that **damage.**

Merrill got 72 mice and divided them into three groups: one to test a mouse's response to hard rock, another to the music of Mozart and a control group that wouldn't listen to any music at all, rock or classical.

The young vivisectionist got all the mice accustomed to living in aquariums in his basement, then started **playing music 10 hours a day**. Merrill put each mouse through a maze three times a week that originally had taken the mice an average of 10 minutes to complete.

Over time, the 24 control-group mice managed to cut about 5 minutes from their maze-completion time. The Mozart-listening mice cut their time back 8-and-a-half minutes.

But the hard-rock mice added 20 minutes to their time, making their average maze-running time 300 percent more than their original average.

Need we say more? Well maybe we do. Merrill told the Associated Press that he'd attempted the experiment the year before, allowing mice in the different groups to live together.

"I had to cut my project short because **all the hard-rock mice killed each other**," Merrill said. "None of the classical mice did that."

* *Heavy Metal Makes Killer Mice, Teen Finds* -- Washington Times, 29 July 97, page C3

In any true experiment, the researcher is attempting to establish a causal link between the explanatory and response variable. In the experiment, the researcher manipulates an explanatory variable, to influence a response variable. In a well-designed experiment every other possible factor (called confounding variables) is eliminated or controlled.

(1) In the Merrill rat experiment, what is the explanatory variable? What is the response variable?

Confounding variables are variables that the researcher failed to control, or eliminate. The confounding variables cloud the connection between the explanatory variable and the response variable, making it impossible to establish a causal link between the two.

(2) Name one plausible confounding variable in Merrill's experiment. Explain briefly how this variable could confound the results of the experiment if Merrill doesn't intentionally control the effect of the variable.

(3) Merrill says that he randomly assigned rats to treatment groups. Describe how he might have done this.

(4) Explain how randomization will control the impact of one of the confounding variables that you listed above.