Identifying Threats to Validity

The animal shelter wanted to find out what kind of food to buy for their animals. They took a random sample of two animals and the food they eat, and they found that spider and rabbit food was by far the most popular cuisine!

What are some possible threats to the validity of this conclusion?

Two animals is *not* large enough to be a representative sample!

It's too easy to randomly choose animals that give us unreliable conclusions.

The sample size is too small to be representative.

A volunteer opens the shelter in the morning and walks all the dogs. At mid-day, another volunteer feeds all the dogs and walks them again. In the evening, a third volunteer walks the dogs a final time and closes the shelter. The volunteers report that the dogs are much friendlier and more active at mid-day, so the shelter staff assume the second volunteer must be better with animals then the others.

What are some possible threats to the validity of this conclusion?

There may be several confounding variables here. Perhaps the volunteer is carrying bacon in their pocket!

Or perhaps dogs are in better moods in the middle of the day, when the sun is out