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**1. People who own more cars tend to live longer than people who own fewer cars. Why is this relationship not evidence that buying more cars increases life expectancy?**

This relationship is not evidence that buying more cars increases life expectancy because the lurking variable is the car buyer's affluence: richer individuals own more cars and tend to live longer, probably because they have access to better medical care and healthier food.

**2. Heavy smokers are about 20 times more likely to get lung cancer than nonsmokers. Why isn't this link by itself good evidence that smoking causes lung cancer?**

This link isn't good evidence that smoking causes lung cancer. There are lurking variables that can cause individuals to develop lung cancer behavior it could not control. One of the variables can be DNA.

**3. What is the difference between a retrospective study and a prospective study?**

The difference between a retrospective study and a prospective study is that in prospective studies, individuals are followed over time and data about them is collected as their characteristics or circumstances change. Birth cohort studies are a good example of prospective studies. In retrospective studies, individuals are sampled and information is collected about their past.

**4. Why is a prospective study that compares a group of smokers with a similar group of nonsmokers not an experiment?**

A prospective study compares a group of smokers with a similar group of nonsmokers, not an experiment. Here, the non-experimental evidence is about as strong as it gets. Remember, not all associations can be explained by cause and effect.

**5. Why do experiments with animals add to the evidence that smoking causes cancer in humans?**

Experiments with animals add to the evidence that smoking causes cancer in humans because you have carcinogen tobacco smoke, it is proved to be carcinogenic to animal tissue, it is highly correlated in retrospective and prospective studies in respect to cancer of the lung in humans, and that was more than sufficient to establish tobacco smoke as a cause of lung cancer and subsequently other cancers in humans.