Exercise 7.1 Inference from a sample

1. Farmers in Queensland will not be too seriously affected by the floods. A recent phone-in poll conducted by ABC News Radio asked the question: 'Will you still buy fruit and veggies, if the prices go up as a result of the flood?' 1,254 people called, sent an SMS or went online to respond. 74% of respondents voted 'yes' and only 26% voted 'no'. So a majority of Australians are willing to pay more for fruit and veggies because of the floods.

Sample: The 1,254 people who responded

Target property: Whether a person is willing to pay more for Australian fruit and vegetables

Population: Adult Australians

The conclusion is **not supported**. The sample is large but first, listeners to BC News Radio might have a specific demographic that is not highly representative of the population. More importantly this is a **self-selected** sample and very likely to be biased for that reason. People with strong opinions are more likely to respond than others.

2. <u>Newspaper report</u>: Quebec environment minister Lise Bacon pledged the PCBs would be moved out and broken down somehow within 18 months. She also said that PCBs couldn't be all that dangerous because her father had washed his hands in PCBs but lived to an old age.

Sample: Depending on how you think of it, the sample would consist either just of Lise Bacon's father or LB's father or of all the occasions on which Lise Bacon's s father used PCBs for handwashing

Target property: Whether PCBs (Polychlorinated biphenyl) are dangerous.

Population: All humans or instances in which people come into contact with PCBs

The conclusion is **not supported**. This is a biased sample of one. Also, the fact that LB's father survived to an old age tells us next to nothing about potential health risks associated with PCBs. Importantly, skin contact is just one way of coming into contact with PCBs. Eating contaminated foods or breathing indoor vapours are others – so it is not even clear that the example of handwashing is relevant to the claim.

3. The most common cause of violence in Melbourne is excessive drinking. I myself, and many of my friends have often been attacked by drunks coming out of pubs and clubs late at night in the city.

Sample: Instances of attacks experienced by me and several friends

Target property: The most common causes of violence in Melbourne

Population: Incidents of violence in Melbourne

The conclusion is **not supported**. The sample is small and is also an availability sample: based on cases the author has experienced and remembered.

4. Dr. Smith: We should teach this course at the Caulfield Campus, rather than at Clayton. It's nearer to the city, so we might attract more students.

Dr. Jones: I don't think so. I've asked most of the students in the course about that and they all said they're perfectly happy to come out to Clayton.

Sample: The students Doctor Jones asked

Target property: Whether having a course at a campus further away from the city is a disincentive

Population: All potential students of the course

The conclusion is **not supported**. The sample size could be small, but more importantly, the sample consists only of students who have already enrolled. So it is a self-selected sample of students for whom the distance of the city is not a major problem (otherwise they would not have enrolled).

5. <u>Letter to a newspaper:</u> The implication that Canada's airport security is more lax than that of the United States is wrong. I managed to clear security in a US airport last November with a pair of scissors (1.5 centimeter blades, flat sides, rounded tips) although it did create a stir and a 15 minute delay. The same potential weapon couldn't get through a Canadian airport I travelled through last month. The scissors were confiscated and my fellow passengers could rest easy.

Sample: One US airport and one Canadian airport/ a single experience of an individual at one US and one Canadian airport

Target property: Airport security

Population: All Canadian and US airports

The conclusion is **not supported**. The sample consists of just two airports which may not be representative.