

## 2.1 Does the author have enough reliable evidence?

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### 1. Is the generalisation based on a sufficient number of instances?

Inferences are frequently made on insufficient samples of the population. Not enough people are polled or instances examined to produce a statistically significant, and hence reliable, result.

#### Examples

‘Over the past month I have eaten three takeaway burgers. Each one has been overcooked and tasteless. It’s clear that you waste your money if you buy takeaway meals.’

Clearly three takeaway meals is not a sufficient number on which to base such a generalisation. It might just have been bad luck that accounted for the poor meals. However, if a food critic who had eaten at hundreds of takeaway restaurants over a long career had come to the same conclusion, then this would have been more reliable.

### 2. Do these instances represent a fair sample?

In this case we are examining the evidence to see whether the instances represent a fair sample:

- Are they typical?
- Are there special conditions prevailing?
- Are there any exceptions?

## Examples

1. 'In a recent study it was found that 68% of residents in New Hampshire watched cooking programmes on TV. As a result, the local broadcaster has decided to invest \$22 million on a new series of programmes on cooking to satisfy the demand and increase its viewing figures.'

Unfortunately, we have no information about the group of residents that were polled. They may have been largely wives and mothers, who tend to take on most of the responsibility for cooking the family's meals. If this is the case, the figures are unrepresentative of the total viewing population and are, therefore, unreliable.

2. 'In a recent survey of its readers by the *Financial Times* it was found that over 73% approved of the government's plans to decrease the highest rate of tax on income from 50% to 40%. Clearly this shows that this policy is deeply unpopular among the electorate.'

The inference that this is deeply unpopular with the electorate is based on evidence that is drawn from a sample of the electorate that may not be representative. The likelihood is that an unrepresentative number of those that read the *Financial Times* and who responded to its survey work in the financial industry or are investors, many of whom will have high incomes and will benefit from lowering of the tax rate.

## Exercise

What kind of evidence would you need to be convinced that the following claims were true? How difficult would it be to gather and assess such evidence?

1. The increase in out-of-town shopping centres has seriously damaged the viability of shops in town centres.
2. The tendency for twin births runs in certain families.
3. Jane's supposed 'hay fever' is, in fact, just an allergy caused by eating tomatoes.
4. Smoking marijuana is no more harmful than drinking a pint of beer. Therefore, like drinking beer, it should be legal.
5. The four men who have most influenced the thinking of mankind over the last two centuries have been Darwin, Marx, Freud and Einstein.<sup>1</sup>

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<sup>1</sup> Some of these have been adapted from Richard D. Altick's book, *Preface to Critical Reading* (New York: Holt, Rinehart and Winston, 1969), pp. 318-20.