

## Evaluating Scientific Claims in the Popular Press

It is often easier to evaluate claims made in an article from a scientific journal such as Science or New England Journal of Medicine, than one in a newspaper or popular magazine. You know that the scientific journal has reviewers read the articles before publication, and there are references that you can check to confirm statements in the article. Newspaper and popular press articles have no references and often little good evidence to support the claim. Often the article is mostly inferences made from evidence presented in another source such as a scientific journal or conference proceeding.

The following checklist is designed to help you evaluate scientific information in newspapers and popular magazines. Write your answers on a separate sheet of paper.

1. List the primary claim
2. List all the evidence presented that is related to the primary claim, both evidence that supports the claim and evidence that contradicts it.
3. Evaluate the evidence. Acceptable evidence is empirical, from a scientific source, and without bias.

Empirical evidence is based on observations, something that can be measured and recorded using human senses and/or instruments e.g. there were 24 sightings of cougars in the Seattle area in 1975 and 36 cougar sightings in 1995. Interpretations of empirical evidence are called inferences and are only accepted if they are reasonable, logical and consistent. The statement “the number of cougars in the Seattle area appears to be increasing” is an inference based on the previous statement.

A scientific source is documented as a scientist or professional in the field, working for a university, government agency, or reputable organization.

To be without bias the claimant should not be paid for the research or results regarding the claim, nor should they benefit in any way from the outcome of the claim.

To show that you have evaluated the evidence provide the following information for **each** piece of evidence:

Source

Is it a scientific source? Basis for this.

With or without bias?

Empirical evidence or inference?

Is evidence presented logically?

Are arguments reasonable and logical?

4. Evaluate the claim and:
  - a. accept conditionally if the empirical evidence is sufficient and is presented logically to support the claim.
  - b. accept conditionally if the scientific evidence is lacking in some way, but the inferences and/or arguments regarding the claim are reasonable and logical.
  - c. reject if there is no empirical evidence presented and inference and/or arguments are contradictory, biased, or presented illogically.
5. Write a paragraph listing your decision in step 4. and your reasons for that decision.