# Argument Maps

The word "Argument" can be loosely defined in two ways: 1) as a verbal fight; and 2) *as a connected series of statements intended to establish a conclusion.* It is the second definition that is relevant to university studies.

Arguments are made clearer by drawing them using an argument map. An argument map always shows the conclusion at the top of the map and the reasons used to establish the conclusion at the bottom. Conclusions are sometimes called **contentions,** and reasons are sometimes called **premises.**
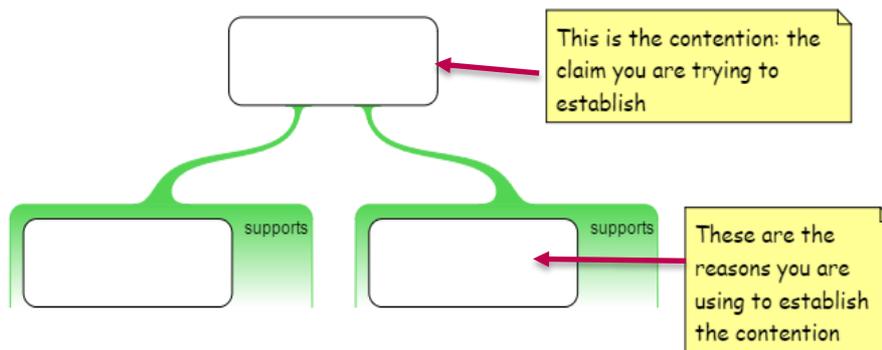
Note that reasons don't always have to support a contention: they can be reasons *against* the contention. These reasons are called **objections,** and reasons against objections are called **rebuttals.** Here is a simple example with an objection and rebuttal added (we have slightly changed our sidebar descriptions):
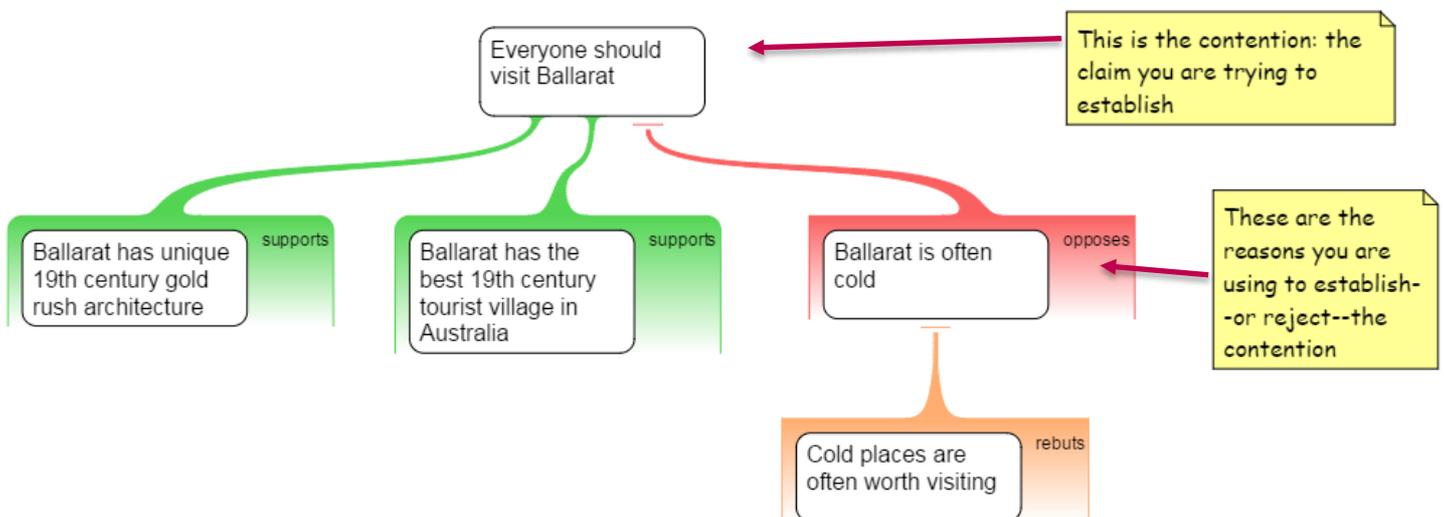
Here we have two reasons supporting a contention, and one reason objecting to a contention. A rebuttal point is objecting to the objection. What's missing here? An obvious thing that is missing is **evidence** that supports the reasons and objections. Without evidence, we don't have to believe them. If we don't believe them, we need not believe the contention. So let's add some terminal evidence for the reasons (these are sometimes called **basis boxes**, i.e., they give us a basis for believing the truth of something):

These examples are evidence for believing the truth of the premises (and hence, the contention)
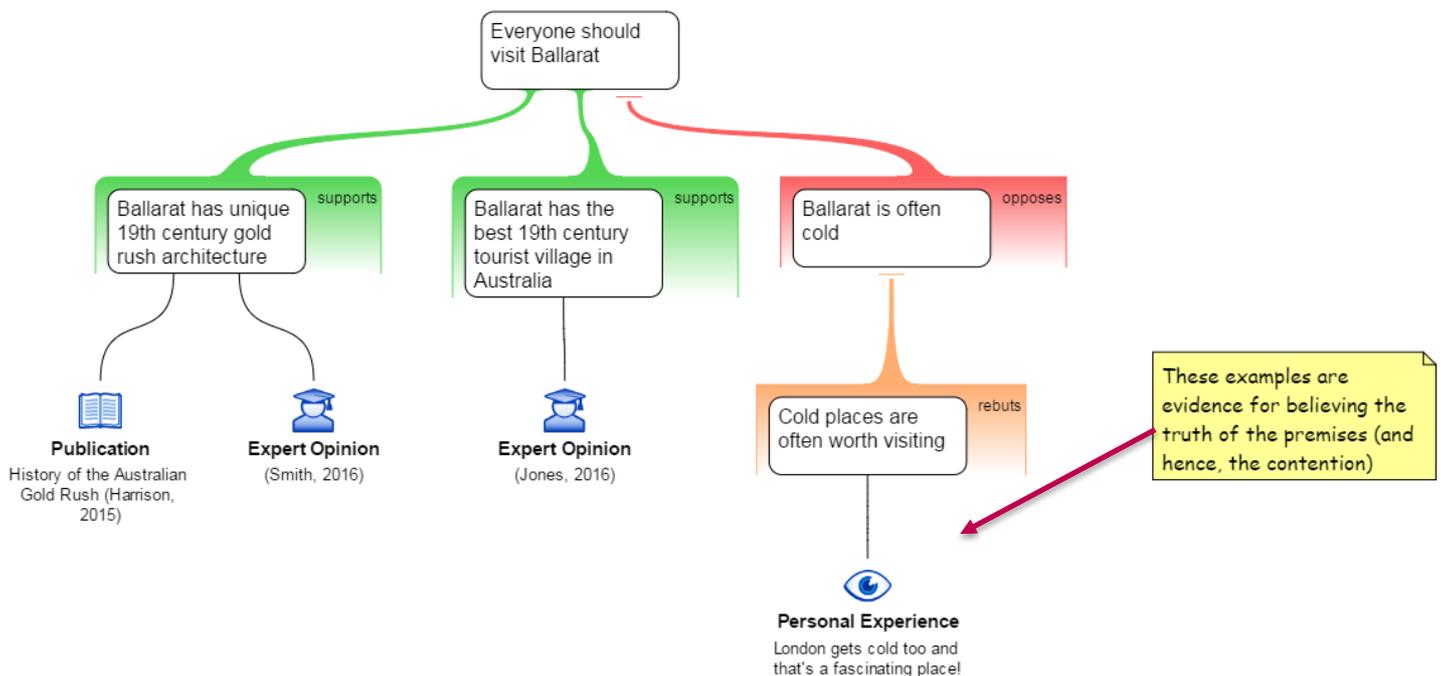
Here we have some expert opinion supporting the reasons, and a publication too. We could add more evidence, but this will make our argument map too complicated. Obviously we would have to be able to **justify** our evidence if we had to—this might involve expanding on the evidence adduced; e.g., outlining the data. What are the kinds of evidence that can be used in forming arguments? Here are a few (NB: some of my examples may have multiple sources of evidence):

- *Documentary/archival:* evidence from the historical records (e.g., Cromwell fell in 1640)
- *Scientific/Empirical:* evidence from experimental data (e.g., water boils at 100 degrees C)
- *Testimonial:* evidence from stories and anecdotes that confirm something (e.g., Saddam Hussain's regime used torture)
- *Demonstrable:* evidence from being shown something (e.g., that *this* is the best way to hold a guitar)
- *Personal:* having personal experience of some claim being true (e.g., Bali is a nice place to visit)
- *Circumstantial:* evidence that might collectively support some claim (e.g., Kennedy was assassinated in a conspiracy)
- *Psychological:* evidence from the effects on a person's mental state (e.g., he is suffering from hypothermia)
- *"Expert":* evidence drawn from experts in the literature or from experts' views in common lore (e.g., Everest is the tallest mountain in the world)
- *Observational:* visual, auditory or tactile evidence (e.g., the room is too hot)
- *Legal:* evidence from legal judgement or precedent (e.g., detainees in off-shore detention camps should be treated humanely).

These are some of the key things important to constructing arguments at university. Ask yourself the following questions: What is your **contention**? What are your **reasons** or **objections** to the contention? What are the objections to the objections (**rebuttals**)? What is the **evidence** for the reasons/objections?