MAKING LOGICAL ARGUMENTS

To make a logical argument, you draw conclusions from evidence or principles (and often both). In order to accept your argument as logical, your reader must find your evidence valid and convincing and/or agree with the principles your conclusions are based on. We distinguish between two major types of reasoning:

Inductive Reasoning

When writers make inductive arguments, they **present a series of examples and argue that these examples justify the conclusions they have drawn**. Take a look at the following example:

> *I never see my friend Marty without a cigarette or a cigar. When we go out, he drinks more than anybody else in our group, often consuming more than six drinks in a single session. If I go by his house on Saturday mornings, he opens the door with a beer in his hand. Besides drinking like a fish, he eats junk food constantly; his car is littered with smelly pizza boxes, hamburger wrappers, and empty soda cans. I think Marty's lifestyle is very unhealthy; he is bound to die prematurely of a heart attack or end up in rehab for his addictions.*

From the evidence given about Marty, very few people would disagree with the writer's conclusion that Marty has unhealthy habits. So the first conclusion is definitely logical. However, not everybody would agree that Marty will die of a heart attack or that he will end up in rehab (it's possible, given his lifestyle, but not certain). Whereas the writer could confidently argue the first point, it would be better if she changed the second part of her conclusion to speculation rather certainty: *If he keeps living like this, Marty might die of a premature heart attack or end up in rehab.*

- **Hasty Generalization**

To a degree, the success of inductive reasoning depends on the reader's willingness to accept the conclusions the writer has drawn from a set of evidence. However, when a **writer presents way too little evidence to justify the conclusion**, we call this a hasty generalization, which is a logical fallacy. Compare the following example to the one above: *I saw Alice drink a beer at the baseball game Saturday night. I had no idea she was an alcoholic.* Unlike the writer who told us about Marty, the writer of the second example cannot expect the reader to accept the conclusion that Alice is an alcoholic based on such flimsy evidence.

To avoid hasty generalization, make sure you present as much evidence as possible. Avoid statements that contain words like *all, every,* and *never*. Also, consider evidence that might disprove your point and adjust your conclusion if necessary. Don't just ignore opposing evidence; your reader will think of it if you don't!

Deductive Reasoning

In deductive reasoning, writers draw their conclusions from a set of two principles or premises. In order for the reader to agree with the conclusion, he/she has to agree with both premises. This three-part structure is known as a **syllogism**.

> *Premise 1:* *A car will not run without gas.*
> *Premise 2:* *I don't have any gas in my car.*
> *Conclusion:* *My car will not run.*

In the above example, both premises are true (facts) and the conclusion is valid, meaning it follows logically from the two premises. However, even though both premises might be true, the conclusion does not have to be valid:

Premise 1: *A car will not run without gas.*
Premise 2: *My car does not run.*
Conclusion: *I must be out of gas.*

In the second example, there are other explanations possible as to why the car does not run. Therefore, the conclusion in the second example is invalid.

In writing, deductive reasoning is not always as clear-cut as in the above example. Generally writers choose first premises they assume the reader will agree with (these are often shared beliefs and values, commonly accepted truths, and constitutional laws) and then demonstrate how the second premise is valid.

P1: A company cannot prosper under incompetent management. [Few people would argue with this]
P2: Francis Higginbottom is an incompetent manager. [This premise the writer will have to prove with sufficient evidence]
C: We need to fire Francis Higginbottom if we want our company to rise to the top. [If the writer manages to convince the readers of Mr. H's incompetence, they will accept the conclusion as valid]

- **Blaming the wrong cause:**

In writing, errors in deductive reasoning often results in **assigning blame to the wrong cause**:

An incompetent mayor will cause problems for a city. Our city has problems. Therefore, the mayor is incompetent. [not necessarily; the problems might stem from many other causes]

To avoid this kind of logical fallacy, always check to see if there isn't another way to account for a problem before you point an accusing finger.

- **Guilt-by-association:**

Another form of invalid deductive reasoning is the **guilt-by-association fallacy**: just because two people or situations share a couple of characteristics, they are not necessarily alike in every other aspect:

The terrorists behind the 9/11 attacks were Arabs. Arabs have dark hair and brown eyes. Therefore, all men with dark hair and brown eyes must be terrorists. (Arguments like this have been used to justify racial profiling.)

To avoid this kind of error, do not let prejudices rule your argument. Just because individuals belong to certain groups (by birth or by choice), they are not clones of each other. Try not to blame an entire group for the misdeeds (or praise them for the accomplishments) of some of its members.

For a comprehensive list of other logical fallacies, see p. 37/38 in the Prentice Hall Reference Guide.