Appendix

Classification of Logical Fallacies

The classification follows the article on "Fallacies" in the *Encyclopedia Britannica* 14th Edition, Volume 9, page 55. This is the shortest and simplest list I have found. I have amplified the description of a fallacy now and then, and added occasional illustrations.

"An argument may be fallacious in *matter* (i.e., misstatement of facts), in *wording* (i.e., wrong use of words), or in *process of inference.*" Fallacies are here classified accordingly as:

      I.   *Material*—having to do with facts.

      II.   *Verbal*—having to do with use of words.

      III.   *Logical or Formal*—having to do with drawing inferences.

These broad classes are then subdivided by the *Britannica* into:

I.   MATERIAL FALLACIES

1. *Fallacy of accident.* Confusing what is accidental with what is essential.

2. *Over-generalizing*, or *secundum quid*. Fallacy of arguing from special case to general rule with not enough cases to warrant a generalization. Or, *per contra*, arguing from general rule to special case, when the rule does not fit.

3. *Irrelevant conclusion*, or ignoring the issue (*ignoratio elenchi*). Instead of keeping to the issue, the arguer seeks to gain his point by diverting attention to irrelevant considerations. A long list is possible. The *Britannica* includes:

a Argument *ad hominem*—attacking the character of the person defending the issue.

b. *Ad populum*—appeal to the sentiments of the crowd.

c. *Ad baculum*—appeal to fear.

d. *Ad verecundiam*—appeal to revered authority or "conventional propriety."

4. *Begging the question,* or *petitio principii.* This fallacy includes arguing in a circle (*circulus in probando*), whereby a conclusion is supposed to be demonstrated by inserting the conclusion into the premises. "Jeremy Bentham points out that his fallacy may lurk in a single word, e.g., if a measure were condemned simply on the ground that it is un-English"—or un-American.

5. *Fallacy of the consequent*. Assuming that if a man is a drunkard he becomes destitute, and then proceeding to argue that if a person is destitute he must be a drunkard.

6. *Fallacy of false cause*, or *non-sequitur*. Basing a conclusion on insufficient or incorrect reasons. (This applies, one would think, to *all* fallacies).

7. *Post hoc ergo propter hoc*: "*After this, therefore because of this*." If event B comes after event A in time, then A is assumed to be the cause of B. If an eclipse of the sun is followed by the loss of a battle, the eclipse is assumed to be the cause of the defeat. *Per contra*, the cause of the victory for the other side.

8. *Fallacy of many questions,* or *plurium interrogationum*. Forcing two or more questions into one illegitimate question, e.g., "Have you stopped beating your wife? Answer yes or no."

II.   VERBAL FALLACIES

1. *Equivocation*. Using one word in two or more senses, e.g.:

> All fair things are honorable.
> This woman is fair.
> Therefore, she is honorable.

In America equivocation is usually called doubletalk.

2. *Amphiboly.* Fallacy due to use of inaccurate grammar, e.g., "They only voted last week" seems to mean they spent the entire week in a voting booth. (All they did last week was vote).

3. *Composition.* A form of equivocation where terms are confused. What is true of a part is supposed to be true of the whole.

4. *Division.* The converse of *composition*. It concludes that what is true of a whole is also true of its parts, e.g.:

The U.S. believes that nations ought to disarm.
The U.S. is a nation.
Therefore, the U.S. should disarm—alone.

5. *Accent.* Fallacy due to emphasizing the wrong word in a sentence. This usually happens in speaking, not in writing, and accounts for much semantic confusion, intentional and otherwise.

6. *Figure of speech.* Misinterpretation of a form of expression, e.g., the phrase "bull in a china shop" has been known to insult Chinese delegates in the United Nations.

III.   LOGICAL OR FORMAL FALLACIES

These are fallacies which violate the formal rules of the syllogism, and include:

1. *Fallacy of four terms, quaternio terminorum.* A formal syllogism can contain only three terms. Thus:

If A is taller than B
And B is taller than C
And C is taller than D
Then A is taller than D

This syllogism is true, but it has form terms and is not allowed in the logic of the classicists.

2. *Fallacy of the undistributed middle term.* In a deductive syllogism, the middle term must be generalized or "distributed" at least once. It must also disappear in the conclusion. Usually it is generalized in the major premise, in order to include the middle term in the minor premise, e.g.:

Some carpenters are German.
Willy is a carpenter.
Therefore, Willy is German.

"All carpenters" would generalized the major term.

3. *Fallacy of illicit process of major or minor term.* The conclusion asserts more than the premises warrant.

All children are innocent.
No grownups are children.
Therefore, no grownups are innocent.

4. *Fallacy of negative premises.* Both premises cannot be negative, or you may reach an absurd conclusion, e.g.:

> No snow is hot.
> No rice is snow.
> Hence, no rice is hot.

This completes the *Britannica's* list. It comprises three over-all classes, and twenty-one fallacies under them: eleven material, six verbal, and four formal. The last group is highly technical, applying primarily to the formal syllogism, and can be indefinitely extended. Frye and Levi in *Rational Belief*, for instance, list eighteen formal fallacies, including such collector's items as "Conversion of O proposition,: and "Denying a disjunct." The journeyman thinker has little to gain by memorizing Section III.

It was from the *Britannica's* Sections I and II that I began the selection of the thirteen fallacies with which this book is mainly concerned. I then added certain others not catalogued by the classicists, but painfully evident to the layman, such as black-or-white reasoning and false analogies.

The *Britannica* list, condensed as it is, should give the reader a fair idea of the difficulties encountered in trying to identify and classify logical fallacies.